THE ARC SPECTRUM OF IRON (Fe I)

PART I. ANALYSIS OF THE SPECTRUM

Based on the work of many investigators and including unpublished studies by MIGUEL A. CATALÁN

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PART II. THE ZEEMAN EFFECT

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PREFACE

The present work deals with a spectrum which has been the object of active study for more than seventy years, and carries one phase of the investigation—the term-analysis of the structure—about as far as existing material appears to permit. The spectrum, though complicated, is found to be highly orderly, and almost all the principal terms predicted by theory are now known. Present methods of observation in the laboratory, however, do not succeed in bringing out the spectrum as completely as it is exhibited in the sun, and future observation, especially for the discovery of better laboratory sources, is still highly promising.

The writers take pleasure in expressing their gratitude to many colleagues who have generously made new and unpublished material available. Special thanks are due to Doctor Miguel A. Catalán for the communication of many spectral terms; to Messrs. Arthur S. King and Harold D. Babcock for laboratory and solar spectroscopic material obtained at Mount Wilson; and to Professor George R. Harrison for observations of the Zeeman effect secured at the Massachusetts Institute of Technology.

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PART I

ANALYSIS OF THE SPECTRUM

Henry Norris Russell and Charlotte E. Moore

I. INTRODUCTION

(1) General Considerations

The neutral atom of iron provides the classical example of a complex atomic spectrum. The ubiquity of the metal, and the richness and ease of production of its spectrum, have led to the general adoption of its lines as standards,[1] so that their wave-lengths are now more accurately known than those for any other element for which data have been published. Full data are available on temperature classification [2] and Zeeman effect, and a good beginning has been made [3] in the determination of the line intensities, transition-probabilities, and f-values. The spectrum is therefore of unusual interest both to the practical spectroscopist and to the theoretical physicist, and most of all to the astrophysicist. The high abundance of iron causes even its faint arc lines to appear in the cooler stars, and the stronger ones in those as hot as Sirius. Many lines predicted by the analysis of Fe I, and not yet observed in the laboratory, agree so closely, in wave-length and estimated intensity, with unidentified lines in the solar spectrum, that there can be no doubt of their presence there (see § 22).

The great number of iron lines and the wide range in intensity and excitation among them make them especially valuable for the determination of curves of growth, and for the investigation of stellar atmospheres.

A complete term-analysis of this spectrum is therefore of prime importance to astronomers and physicists alike. Practically complete analyses of Fe II [4] and Fe III [5] have already been published. One of comparable extent for Fe I has been delayed partly by the richness of the spectrum but more by political conditions (§ 2). It is at last possible to present it here.

(2) Previous Investigations

Shortly after Catalán's discovery of multiplets, twenty of them were identified in Fe I by F. M. Walters, Jr.[6] in 1923. In 1924 he published a list of 52 multiplets involving 26 spectral terms [7] of multiplicities 3, 5, and 7—though the last were not connected with the others. This was accomplished almost at the same time by the independent work of Laporte,[8] who classified about 600 lines and derived an ionization potential of 8.15 volts—which he revised to 8.06 in 1926 [9]—adding a few more terms. These results were shown by Hund [10] to be in complete agreement with his general theory of the structure of atomic spectra. Additional terms, almost all discovered by Walters, and communicated by him to colleagues, were announced by Meggers [11] and by Moore and Russell.[12]

Notable extensions of the analysis were accomplished (again independently in the main) by Burns and Walters [13] and by Catalán.[14] The latter accounted for 2350 lines by combinations among 304 energy levels, identified 51 terms, and determined the ionization potential as 7.83 volts. Many fairly strong lines remained unclassified, and 135 of the energy levels were not grouped into terms.

The only published addition to this appears to be Green's identification [15] of a few high terms, but it was generally known that Dr. Catalán was continuing the analysis. In 1936, in response to a request from the writers for his new terms for use in the "Multiplet Table," he generously sent a list of the low even terms, and stated that the remaining terms would be sent as soon as he could copy them. This list included singlet terms, making this the first spectrum (and up to the present, the only one) in which terms of four different multiplicities are known.

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[1] *Trans. Internat. Astron. Union* 3: 86, 1928; 4: 60, 1932; 5: 84, 1935; 6: 79, 1938.

[2] King, A. S., *Mount Wilson Contr.* No. 66, 1913; No. 247, 1922; and No. 496, 1934; *Astrophys. Jour.* 37: 239, 1913; 56: 318, 1922; 80: 124, 1934.

[3] King, R. B., and A. S. King, *Mount Wilson Contr.* No. 528, 1935; and No. 581, 1938; *Astrophys. Jour.* 82: 377, 1935; 87: 24, 1938.

[4] Dobbie, *Annals Solar Physics Observ.* (Cambridge) 5, pt. 1, 1938.

[5] Edlén and Swings, *Astrophys. Jour.* 95: 532, 1942.

[6] *Jour. Washington Acad. Sci.* 13: 243, 1923.

[7] *Jour. Optical Soc. America* 8: 245, 1924.

[8] *Zeitschr. f. Physik* 23, 135, 1924; 26: 1, 1924.

[9] *Proc. Nat. Acad. Sci.* 12: 496, 1926.

[10] *Linienspektren*: 163. Berlin, Springer, 1927.

[11] *Astrophys. Jour.* 60: 60, 1924.

[12] *Mount Wilson Contr.* No. 365, 1928; *Astrophys. Jour.* 68: 151, 1928.

[13] *Publ. Allegheny Observ.* 6: 159, 1929.

[14] *Anales Soc. Española Fisica y Quimica* 28: 1239, 1930.

[15] *Phys. Rev.* 55: 1209, 1939.

Shortly afterward, the Spanish War broke out. Communications were interrupted, and it was not known whether Dr. Catalán's laboratory and papers were accessible to him—or still in existence. To aid in continuing his work, a line-list of Fe I, containing all data available to the writers and unpublished Zeeman data by Babcock, was prepared at Princeton and sent to him. More than four years later Dr. Catalán sent a list of spectral terms and Zeeman g-values containing a great amount of new material. Many of the g-values appear to have been derived from Babcock's data. Communication is still very difficult, and he has been unable to send his long list of classified lines. This has had to be reconstructed from the term-values.

Additional data became available in 1941 when Professor G. R. Harrison, of the Massachusetts Institute of Technology, entrusted for discussion to Professor Dorothy W. Weeks, of Wilson College, a complete set of records of the Zeeman effect of iron, made on his automatic measuring machine, from spectrograms taken with the great Bitter magnet. This material is much more extensive and more fully resolved than any which had previously existed. Miss Weeks' results, including patterns for 1038 lines and the determination of g-values for 392 energy levels, are reported by her in Part II of this memoir.

For this work, a comprehensive analysis of the spectrum was prerequisite, and Miss Weeks and the writers were able to collaborate to great mutual advantage. The Zeeman patterns for previously unclassified lines were of great value in suggesting identifications, and the g-values which were derived for many known levels were often conclusive, either in confirming previous term-assignments or in suggesting new ones. At the same time the writers reviewed the existing analysis of the spectrum and were able to find a number of new levels and terms. Many of these were identified as terms predicted by Hund's theory, and nothing was found inconsistent with it.

The progress of the analysis of this spectrum has been curiously uneven. The numbers of energy levels detected and published in successive intervals are given in table 1. An attempt has been made in table A (p. 134) to assign each separate energy level to the investigator who first presented good evidence for its existence (irrespective of later assignment of a term-classification).

A list of the total would be misleading, since Walters and Laporte in 1924 worked and published independently and almost simultaneously, and Catalán in 1930 did not have access to the work of Burns and Walters in 1929. The principal contributors to the published analyses have been Walters, Catalán, and Laporte. The most important unpublished contribution is Catalán's. The analysis which is here presented is thus the co-operative work of many investi-gators, and the work of the writers has been largely editorial. Dr. Catalán would appear as a joint author of this work were it not for the difficulties of communication which have prevented the continuous exchange of results which the writers would otherwise have desired. As things are, they have been obliged to take the responsibility for the final assignment of term designations, the configuration analysis, and the rejection of doubtful levels. A few of Catalán's designations have been altered, mainly on the basis of new and more precise Zeeman data.

The present work is therefore one more example of the cordial international co-operation among spectroscopists which has been so largely responsible for the rapid advance of the analysis of complex spectra. It was not terminated until it was obvious that the law of diminishing returns was in active operation and that very little more in the way of discovery of additional energy levels would result from extensive effort.

The present lists contain 4860 classified lines, arising from combinations among 464 energy levels. Thanks to the complete Zeeman data, all but 19 of these have been grouped into 146 terms, which combine to give 1342 multiplets.

In so complicated a spectrum as this there can be no hope of classifying all the faint lines. There is good reason, however, to believe that the analysis is substantially complete. Almost all the stronger lines have been classified. Taking as a criterion the lines recorded by King in his temperature classification,

TABLE 1

PROGRESS OF ANALYSIS OF THE SPECTRUM

Dates	Low Even	High Even	Odd	Total
1923–24	16	20	94	130
1924–28	18	12	16	46
1929–30	3	62	57	122
1930–44			17	17
Total published	37	94	184	315
Catalán unpublished	12	9	68	89
Present writers	13	19	28	60
Grand total	62	122	280	464

which number 1753 and lie between 10469 and 2298A, we find that 46 remain unclassified, of which one is of intensity 20 and the next 8 on a scale in which the strongest lines reach 1500. The configuration analysis in §§ 10–14 shows also that almost all the terms which theory predicts as likely to give even moderately prominent lines have been identified.

Though this familiar spectrum has been so much observed, it is probable that a very large number of additional arc lines of iron can be detected when better sources for faint lines are devised (§ 25).

II. OBSERVATIONAL DATA

(3) WAVE-LENGTHS

A complete and accurate list of wave-lengths and wave-numbers is the prime necessity for an analysis. There is a wealth of material for Fe I, but this is very far from homogeneous. The principal lines have been measured with very high precision—especially the International Secondary and Tertiary Standards,[16] which depend on three or more independent sets of interferometer measures. Many other lines have been measured by interference methods, and a great many more with gratings of adequate dispersion. There remain, however, many faint lines which have never been accurately measured in the laboratory—some only to 0.1A. Many of these agree with the predictions of the term-analysis within their limits of error and are undoubtedly due to iron.

A detailed and critical list of wave-lengths, based on homogeneous material and standards, is much to be desired, but there is no hope of this during the war.

The wave-lengths which appear in table B (p. 139) represent, therefore, a compilation from all available sources. Reasonable care has been taken to adopt determinations from those sources which, in general, were judged to be most reliable, but it should be emphasized that the list cannot be considered a definitive one. Wave-lengths of extreme precision are essential in the first attempts to break into complex spectra like those of some of the rare earths, which contain few outstanding lines; but the extension of an analysis in which many accurate values of terms and term-differences have already been found makes less severe demands. The existing material has proved generally adequate for the purpose, although the probable error of the worst measure in the table is at least twenty times that of the best.

The long list of sources at the end of table B is arranged roughly in order of accuracy—beginning with the standards, and ending with the rough measures just mentioned. The detailed order of the reference letters has, however, been adopted partly as a matter of convenience (e. g., good measures in the infra-red come early in the list); and the writers explicitly disclaim the assumption that an earlier letter in the alphabet always, or even usually, indicates that they regard the measures referred to as better than some others which may come a few places lower.

The numerous "predicted" lines of Fe I which have been taken from The Revised Rowland Table [17] are discussed in §§ 18–23 and listed in table C (p. 170) along with many others taken from Babcock's extension in the infra-red.[18]

[16] Trans. Internat. Astron. Union 3: 86, 1928; 4: 60, 1932; 5: 84, 1935; 6: 79, 1938.
[17] Publ. Carnegie Inst. Washington No. 396, 1928.
[18] Unpublished material.

(4) INTENSITIES

The recorded intensities of the lines in the great majority of spectra are in a state of primeval chaos. Different observers have used radically different scales. The older estimates were usually made on a scale from 1 for the weakest lines to 10 for the strongest. In some recent work (e. g., on the rare earths) a far more open scale has been adopted—from 1 to 1000 or even to 10000. Even the last probably falls short of representing the actual range.

In a few cases where an experienced observer, who has a fairly stable scale of estimation, has photographed the whole range of the spectrum, and made his estimates approximately homogeneous by comparison of overlapping plates, the recorded intensities give a good idea of the relative strengths of the lines on the photographs. Allowances must be made for the varying sensitiveness of the plates and for self-reversal and masking of weak lines by strong neighbors, but the experienced reader can obtain a fairly reliable idea of the actual intensity relations.

In the present case, however, one has to deal with a hodge-podge of estimates on all sorts of scales. The attempt to reduce these to an even roughly homogeneous system is hopeless. An experienced observer making rapid eye estimates on a good set of plates could produce a much better list of intensities.

The intensities found in table B have been taken from what seemed to be as good a source as any (not always the same as for the wave-length). The estimates by King, Meggers, and Kiess, which are on the open scale,[19] are given without parentheses; those of other observers, which are almost all on the narrow scale, in parentheses.

In the course of the analysis, where all known multiplets were written out in detail, the writers obtained a rough idea of the meaning of the estimates of different workers, and they believe that errors in the multiplet analysis resulting from the raggedness of the intensity estimates have been avoided.

All users of table B should, however, be explicitly warned that the tabulated intensities afford only a rough general indication, and should not be used for any quantitative purpose without special study.

(5) TEMPERATURE CLASSIFICATION

These data, which are also of primary importance in the analysis, are taken entirely from King's work.[20] The differences in openness of the intensity scale noted above have very little effect on the temperature classification. The tendency toward assignment of a higher temperature class in the ultra-violet is well known.

[19] Even here several different scales are involved; e. g., King's estimates in his first two papers differ systematically where they overlap, and his later scale in the deep-red is much more open.
[20] Mount Wilson Contr. No. 66, 1913; No. 247, 1922; No. 496, 1934; Astrophys. Jour. 37, 239, 1913; 56: 318, 1922; 80: 124, 1934.

(6) ZEEMAN EFFECT

The observations and results are discussed by Miss Weeks in Part II.

III. THE ANALYSIS OF THE SPECTRUM

(7) ENERGY LEVELS. ACCURACY OF DETERMINATIONS

The main outlines of the structure of the spectrum have been known since 1924. Burns and Walters in 1929 [21] determined the relative positions of 199 energy levels to 0.001 cm^{-1} with the aid of lines measured with the interferometer. These values have been adopted without change except for those levels whose values have been recommended by the International Astronomical Union,[22] although some of the standard wave-lengths upon which they depend have been slightly altered. The remaining 265 levels—most of which were discovered by Catalán—have been determined by the usual process of approximation, finding values for each new level from all the transitions which connect it with previously determined levels, working backward from these to derive improved values for such of the first group as have not already been taken as final, and so on. These values are given to 0.01 cm^{-1}.

The number of combinations from which a level has been determined ranges from more than thirty to one or two in a few instances. In the latter case, the levels were not accepted as real unless their existence was confirmed by position in multiplets, Zeeman effect, or both. Most of them are leading components of terms which have high J-values and give strong lines.

A complete study of the accuracy of the tabular level values would involve one of the accuracy of the various wave-lengths, and is not here attempted. A general idea may be obtained from the residuals of the individual determinations of each level from the mean. For 1118 determinations of 155 odd levels the mean residual, regardless of sign, is ±0.036 cm^{-1}, and for 325 of 48 high even levels, ±0.045 cm^{-1}. If these residuals arose solely from the errors of the levels which are being determined, the correct values of the average error could be found by dividing them by $\sqrt{(n-1)/n}$, where n is the number of observations contained in the mean. The average value of the divisor for the individual odd levels is 0.884, and for the even ones 0.873, giving ±0.041 and ±0.052 as the average error of a determination, or a general mean of ±0.043 cm^{-1}. This should be increased to allow for the error of the other level-values from which these were derived, but a large proportion of the others were accurate interferometer values, so that the estimate of ±0.05 cm^{-1} as the average error of a determination of a level from a single line may be adopted. Results derived from lines in the red will be more accurate, and from ultra-violet lines less so—assuming

[21] *Publ. Allegheny Observ.* 6: 159, 1929. See also 8: 39, 1931.
[22] *Trans. Internat. Astron. Union* 4: 65, 1932.

equal accuracy of wave-lengths. This refinement may await a definitive list of iron wave-lengths. Meanwhile, it may safely be assumed that the level-values given to two places in table A have average errors ranging from ±0.02 to ±0.04 cm^{-1}. Twenty-three cases in which the uncertainty is greater are marked by colons. These include:

(a) 15 values based on a single well-measured line. (The reality of the level is usually confirmed by other poorly measured lines.)

(b) 7 values in which the observations are discordant, with average residual exceeding 0.08 cm^{-1}.

(c) one value based on four lines measured to ±0.1A (u^{5}P$_3$°). For these levels the uncertainty may reach ±0.1 cm^{-1}.

Table A (p. 134) contains those energy levels (464 in number) which have been finally accepted as real. It is arranged in order of term-types, the even terms preceding the odd; singlets, triplets; etc.

The first column gives the adopted electron configurations (when assignable with reasonable probability—see §§ 8–15); the second, the term-designations; the third, the energy levels above the ground state a^{5}D$_4$; and the fourth, the differences between successive components of a multiple term—positive when, as usual, the order is "inverted." The fifth column gives references to the author who appears to have been the first to present good evidence of the existence of each energy level, and the last, the definitive g-values determined by Miss Weeks, which are identical with the "corrected" values of table E (p. 203).

The unclassified even levels are listed after the classified even levels and similarly for the odd. The notation is that generally adopted.

IV. SPECTRAL STRUCTURE. IONIZATION POTENTIAL

(8) THE LOW LEVELS

The theoretical interpretation of the spectrum given in Hund's classic monograph has been fully confirmed by all subsequent work. The principal low terms arise from the even electronic configurations 3d^6 4s^2 and 3d^7 4s, and are thoroughly intermingled. These combine with very numerous odd terms coming from 3d^6 4s 4p and 3d^7 4p; and these again with terms of high even configurations, in which 4p is replaced by 5s or 4d.

The low even terms which may theoretically be anticipated are as follows:

Configuration	Quintets	Triplets	Singlets
d^{6}s^2	D	P D F G H (P F)	S D F G I (S D G)
d^{7}s	P F	P F, P D F G H (D)	P D F G H (D)
d^8		(P) F	(S D G)

The terms inclosed in parenthesis may be expected to be so high as to be almost unobservable.

The quintet terms and the lowest triplet, a³F, were assigned to these configurations by Laporte in 1924. The assignment of the others on the basis of combination intensities would not be easy, as many cross-connections are strong; but all ambiguity is removed by comparison with the low terms in Fe II and Fe III, which have been thoroughly investigated by Dobbie [23] and by Edlén and Swings.[24] In the latter, the terms derived from d⁶ lie much lower than the others, and have been identified with certainty. Their relative positions and those of certain levels of Fe I are given in table 2, the levels being measured from the lowest, a⁵D₄, in both cases. The parallelism of the two sets of values is remarkable. The terms a¹I, b¹G, and

TABLE 2

Fe III, d⁶			Fe I, d⁶s²			I-III	I-0.96 III
Term	J	Level	Term	J	Level		
a⁵D	4	0	a⁵D	4	0	0	0
	3	436		3	416	− 20	− 3
	2	739		2	704	− 35	− 6
	1	932		1	888	− 44	− 7
	0	1027		0	978	− 49	− 8
a³P	2	19405	a³P	2	18378	−1027	−249
	1	20688		1	19552	−1136	−308
	0	21208		0	20038	−1170	−322
a³H	6	20051	a³H	6	19390	− 661	+141
	5	20301		5	19621	− 680	+132
	4	20482		4	19788	− 694	+125
a³F	4	21462	b³F	4	20641	− 821	+ 37
	3	21700		3	20875	− 825	+ 43
	2	21857		2	21039	− 818	+ 56
a³G	5	24559	b³G	5	23784	− 775	+207
	4	24941		4	24119	− 822	+176
	3	25142		3	24339	− 803	+203
a³D	3	30858	b³D	3	29372	−1486	−252
	2	30716		2	29357	−1359	−130
	1	30726		1	29320	−1406	−177
a¹I	6	30356	a¹I	6	29313	−1043	+171
a¹G	4	30886	b¹G	4	29799	−1087	+147
a¹S	0	34812					
a¹D	2	35804	b¹D	2	34637	−1167	+265
a¹F	3	42897					
b³F	4	50276					
	3	50295					
	2	50185					
b³P	2	50412					
	1	49577					
	0	49148					

[23] Proc. Roy. Soc. A 151: 703, 1935; Annals Solar Physics Observ. (Cambridge) 5, pt. 1, 1938.
[24] Astrophys. Jour. 95: 532, 1942.

TABLE 3

Fe II d⁷			Fe I d⁷s							
Term	J	Level	Term	J	Level	I-II	Term	J	Level	I-II
a⁴F	4½	1873	a⁶F	5	6928	5055	a⁴F	4	11976	10103
	1½	3118		1	8155	5037		2	12969	9851
a⁴P	2½	13474	a⁶P	3	17550	4076	b⁴P	2	22838	9364
	½	13905		1	17927	4022		0	23052	9147
a²G	4½	15845	a⁴G	6	21716	5871	a²G	4	24575	8730
	3½	16369		4	22249	5880				
a²P	1½	18361	c⁴P	2	24336	5975	a²P	1	27543	9182
	½	18887		0	25091	6204				
a²H	5½	20340	b⁴H	6	26106	5766	a²H	5	28820	8480
	4½	20806		4	26628	5822				
a²D	2½	20517	a⁴D	3	26225	5708	a²D	2	28605	8088
	1½	21308		1	26406	5098				
b²F	3½	31999	d⁴F	4	37046	5047	a²F	3	40534	8535
	2½	31812		2	36940	5128				
d²D	2½	48039								
	1½	47675								

b¹D in Fe I were discovered with the aid of this relation, the search being fairly easy, with their relative positions so closely predicted. The ¹S and ¹F terms were not found despite careful searching.

The comparison between d⁷ of Fe II and d⁷s of Fe I involves two terms in the latter for each one in the former, with multiplicities greater and less by one. The results are shown in table 3. For brevity, only the components of highest and lowest J are tabulated. Here again the agreement, both in position and in separation, is conclusive. Dobbie assigns the configuration d⁷ in Fe II to the term c²F at 44915 and d⁶s to b²F, but decisive evidence for interchanging the two appears upon comparing d⁶ of Fe III with d⁶s of Fe II,

TABLE 4

Fe III d⁶	Fe II d⁶s						II-III	Fe I d⁶s²
Desig	Desig	Level	II-III	Desig	Level	II-III	Wtd. Mean	Desig
a⁵D	a⁶D	0	0	a⁴D	7955	7955	3182	a⁵D
a³P	b⁴P	20831	1426	b²P	25787	6382	3078	a³P
a³H	a⁴H	21252	1201	b²H	26170	6119	2840	a³H
a³F	b⁴F	22637	1175	a²F	27315	5853	2734	b³F
a³G	a⁴G	25429	870	b²G	30389	5830	2523	b³G
a³D	b⁴D	31483	625	b²D	36253	5395	2215	b³D
a¹I	a²I	32876	2520					a¹I
a¹G	c²G	33467	2581					b¹G
a¹S	a²S	37227	2415					
a¹D	c²D	38164	2360					b¹D
a¹F	c²F	44915	2018					
	(b²F)	(31999)	(−10898)					

as shown in table 4, where only the leading components of the terms are given. The designations of the related terms in Fe III and Fe I are added for reference. For the doublets derived from singlets the differences II–III are closely in line with the means, weighted in accordance with the multiplicities, in the other cases. These are found in the last column but one of the table. This comparison shows also that d^2D of Fe II does not come from d^6s, as Dobbie tentatively suggests, but from d^7, where there is a place for it (table 3).

The nature of c^3F is settled by the Zeeman data. It may be assigned with confidence as the lowest term from d^8. For elements of neighboring atomic number, in which the lowest terms from d^n are well-determined, the differences between these and the lowest terms of $d^{n-1}s$ are as follows for the leading components:

Cr I	d^5 $^5D - d^5s$ ^7S	35399
Co I	d^9 $^2D - d^8s$ ^4F	24016
Ni I	d^{10} $^1S - d^9s$ ^3D	14525

The corresponding term in Fe I should be from 25000 to 30000 above a^5F_5. For c^3F_4 (32873) this difference is 25955. The over-all separations of the terms are 243 and 973 for Cr I and Co I. The value 892 for c^3F also falls into line.

The next lowest term of the d^8 configuration should be ^1D, followed by ^3P. The separations of $^1D_2$ and $^3P_2$ from $^3F_4$ are 6868, 8215 for d^2s^2 in Ti I, and 13521 (raised by perturbations) and 15609 for d^8s^2 in Ni I. It is probable that these terms in Fe I lie about 10000 and 13000 cm^{-1} above c^3F.

The list of low even terms of Fe I is complete up to the level where combinations would be very difficult to find—except for two singlet terms from d^6s^2.

(9) RELATED HIGHER TERMS. IONIZATION POTENTIAL

The strongest lines of Fe I arise from terms based on the three lowest terms of Fe II and form a distinctive group, as follows (table 5):

TABLE 5

Limit Fe II		Added Electron				
		4s		4p		5s
d^6s	a^6D			$z^7P°$	$z^7D°$ $z^7F°$	e^7D
		a^5D		$z^5P°$	$z^5D°$ $z^5F°$	e^5D
				$y^5P°$	$x^5D°$ $x^5F°$	g^5D
d^6s	a^4D			$z^3P°$	$z^3D°$ $z^3F°$	e^3D
d^7	a^4F	a^6F		$y^5D°$	$y^5F°$ $z^5G°$	e^5F
		a^4F		$y^3D°$	$y^3F°$ $z^3G°$	e^3F

These terms and their mutual relations have long been recognized. They include all the lower terms belonging to each group (low even, odd, high even) and are almost completely separated from the higher terms of each group except for g^5D, e^3D, which are

intermingled with others. Because of this isolation, they should be little perturbed, and comparison of the 4s and 5s terms should give a good approximation to the ionization potential. In making this, it is possible to improve considerably on a simple Rydberg formula by assuming that the difference in the denominators n* for 4s and 5s is not exactly unity, but has a value interpolated between the results for homologous terms in the spectra of elements of neighboring atomic numbers, in which the limits and values of n* are accurately determined by longer series.

For the configuration $d^{n-1}4s$ and $d^{n-1}5s$, each low term has a high one uniquely in series with it, but for $d^{n-2}4s^2$ and $d^{n-2}4s5s$, both the higher terms such as e^7D, e^5D are, in a sense, in series with a^5D. The differences Δn^* are smaller for the change involving an increase in multiplicity, but both run smoothly with atomic numbers, and may be used as is illustrated in table 6.

TABLE 6

VALUES OF Δn^* (5s–4s)

Low Configuration		$d^{n-1}s$	$d^{n-2}s^2$	
Change in Multiplicity		0	+2	0
At. No.	Element			
24	Cr	1.075		
25	Mn		0.960	1.080
26	Fe			
27	Co		0.999	1.108
28	Ni	1.077	1.007	1.120
29	Cu	1.066	1.013	1.142
30	Zn		1.025	

The value of Δn^* for $d^{n-1}s$ is for the higher multiplicity. Ill-determined or perturbed terms are omitted, and some which do not exist are left blank.

The values of Δn^* in Fe I may now be estimated as 1.072 for a^5F, e^5F, 0.982 for a^5D, e^7D, and 1.094 for a^5D, e^5D. The corresponding limits are easily found with the aid of a detailed Rydberg Table,[25] changing approximate values until the desired Δn^* is obtained. The results for the component of greatest J-value in each term are as follows (table 7):

TABLE 7

Terms	n*	n*	Δn^*	Limit	Ionization
a^5D_4, e^7D_5	1.3170	2.2950	0.9820	63650	63650
a^5D_4, e^5D_4	1.3135	2.4075	1.0940	63630	63630
a^5F_5, e^5F_5	1.3699	2.4419	1.0723	65408	63535

The limit given in the last column but one is $a^6D_{4\frac{1}{2}}$ in Fe II (the ground-level) for the first two lines, but

[25] *Rydberg Interpolation Table.* Princeton Univ. Observ., 1934.

$a^4F_{4\frac{1}{2}}$ (which is higher by 1873) for the last line. Subtracting this gives the value of $a^6D_{4\frac{1}{2}} - a^5D_4$, which measures the ionization potential. The three determinations are remarkably concordant with mean 63605.

An independent and probably a still better determination can be obtained from the higher ^7D terms which were found during the revision of the spectrum. The term g^7D evidently arises from $(a^6D)6s$. Search for the $7s$ term found the level here called h^7D_5. The remaining components were not located, but this is determined by three good combinations with the $4p$ triad, and is trustworthy. Fitting a Ritz formula to e^7D_5, g^7D_5, h^7D_5 (by adjustment of the limit) gives:

$$n^7D_5 = 63732 - T; \quad T = \frac{R}{n - 1.6454 - 3.07 \times 10^{-6}T}$$

This corresponds to an ionization potential of 7.862 volts, 0.016 volts higher than the first determination. The value 63700, corresponding to 7.858 volts, may be adopted. This is 0.02 volt higher than the previously accepted value and is probably reliable to 0.01 volt.

V. ELECTRON CONFIGURATIONS

(10) THE HIGH EVEN TERMS

The terms arising from configurations involving $5s$ electrons have been discussed. A $4d$ electron added to the three principal limit-terms should give pentads, of which the following terms have been identified:

a^6D; e^7G, e^7F, f^7D, e^7P, c^7S; e^5G, f^5F, f^5D, e^5P, e^5S
a^4F; e^5H, f^5G, g^5F, h^5D, f^5P; e^3H, e^3G, f^3F, f^3D, e^3P
a^4D; g^5G, $\dots i^5D \dots$

All but one of the 42 levels arising from a^6D and of the 38 from a^4F have been found in each case. They form closely packed groups—the first between 50342 and 52067 and the second from 53061 to 55726. A large majority of the levels can be conclusively identified from the multiplet intensities and g-values, but the assignments are uncertain for the levels of small J. These complicated groups were first unravelled by Catalán. His conclusion that e^5S_2 and e^7F_3 are practically coincident is confirmed by the writers, but the present arrangement of the $(a^4F)4d$ group differs from his. In Co I, Ni I, and Cu I, where components of the limit-terms are widely separated, there is definite evidence that in the configura-

TABLE 8

TERM VALUES AND DENOMINATORS

Limits	$a^6D_{4\frac{1}{2}}$ 63700			$a^4F_{4\frac{1}{2}}$ 65573, $a^4F_{3\frac{1}{2}}$ 66130			$a^4D_{3\frac{1}{2}}$ 71655		
Electron	Desig	Term	n*	Desig	Term	n*	Desig	Term	n*
4s	a^5D_4	63700	1.312	a^5F_5	58645	1.368	a^3D_1	71655	1.238
				a^3F_4	53597	1.431			
5s	e^7D_5	20884	2.292	e^5F_5	18567	2.431	g^5D_4	20305	2.325
	e^5D_4	19023	2.402	e^3F_4	17612	2.496	e^3D_3	20361	2.321
6s	g^7D_5	9899	3.330						
7s	h^7D_5	5803	4.349						
4d	e^7S_3	12130	3.008	f^5P_3	12413	2.973			
	e^7P_4	13225	2.881	h^5D_4	12418	2.973			
	f^7D_5	13322	2.870	g^5F_5	12512	2.961	i^5D_4	13957	2.804
	e^7F_6	13358	2.866	f^5G_6	12404	2.974			
	e^7G_7	13048	2.905	e^5H_7	12298	2.987	g^5G_6	13653	2.835
	e^5S_2	12551	2.957	e^3P_2	11250	3.123			
	e^5P_3	11863	3.041	f^3D_3	12382	2.977			
	f^5D_4	13277	2.875	f^3F_4	11447	3.096			
	f^5F_5	12597	2.951	e^3G_5	12391	2.976			
	e^5G_6	13177	2.886	e^3H_6	12289	2.988			
4p	$z^7P_4°$	39989	1.657	$y^5D_4°$	32477	1.838	$y^5P_3°$	34888	1.774
	$z^7D_5°$	44349	1.573	$y^5F_5°$	31878	1.855	$x^5D_4°$	32029	1.851
	$z^7F_6°$	41050	1.635	$z^5G_6°$	30729	1.890	$x^5F_5°$	31398	1.870
	$z^5P_3°$	34644	1.780	$y^3D_3°$	27398	2.001	$z^3P_2°$	37708	1.706
	$z^5D_4°$	37800	1.704	$y^3F_4°$	28887	1.949	$z^3D_3°$	40333	1.650
	$z^5F_5°$	36825	1.726	$z^3G_5°$	30194	1.906	$z^3F_4°$	40348	1.649
5p	$u^5P_3°$	12008	3.023						
	$t^5D_4°$	12623	2.948						
	$u^5F_5°$	12683	2.941						

tion $d^{n-2}s \cdot d$ the leading components of all the ten terms belonging to a pentad are derived from the component of highest J-value of the limiting terms and all lie at almost the same level—while in $d^{n-1} \cdot d$ the two leading components of the terms of higher multiplicity both go to the limit with greatest J and lie close together, while the leading components of the terms of lower multiplicity go to the next component of the limit and are near the level of the third components of the terms of higher multiplicity. Catalán has assumed that the former rule applies to both sets of pentads in Fe I. For those derived from $d^6s(^6D)$ the Zeeman data confirm this, but for those from $d^7(^4F)$ the other arrangement gives a better representation of the intensities and also of the g-values. For the smaller values of J the mutual perturbations of the levels are great. The g's differ widely from the theoretical values (§ 29), and large perturbations of the intensities and levels are to be anticipated. There can be no doubt that these levels belong to the pentad as a whole, but the assignment of individual term-designations has little significance.

Of the third pentad, with limit a^4D, only the terms g^5G (discovered by Miss Weeks from the Zeeman effect) and part of i^5D have been identified. There are unclassified lines in the appropriate region of the spectrum which may come from other levels belonging to this pentad, but not enough to locate them.

The term-values for the leading components of the terms based on the three lowest terms of Fe II, referred to these as limits, and the corresponding values of n* are given in table 8. The triplets of $(a^4F)4d$ are referred to $a^4F_{3\frac{1}{2}}$ as limit, for reasons described above. The limits are referred to the ground-level of Fe I as origin. Table 8 shows that few more high even terms should be observable even though more complete line lists were available. The group $(a^4D)4d$ could probably be filled up. The $^5D_4$ term from $(a^6D)6s$ should have n* about 3.45, and be at 63700–9200 or 54500, and its combinations might be found. The ^5F, ^3F of $(a^4F_4)6s$ may be expected near 56000 but should give faint lines and those from $(a^4D)6s$ still fainter ones.

A 5d electron should give n* about 3.9 and levels about 7000 below the limit. The unidentified levels 1, 2, and 3, which combine like septets, may belong to the pentad group with limit a^6D.

Terms having limits in Fe II higher than a^4D are hardly to be expected. The next lowest limits are $a^4P_{2\frac{1}{2}}$ at 13477 and $a^2P_{1\frac{1}{2}}$ at 18361 above $a^6D_{4\frac{1}{2}}$. The addition of any even electron but 5s to them would produce states lying above the principal ionization level, subject to auto-ionization and giving faint and diffuse lines, if any. The terms arising from $(a^4P)5s$ have been searched for unsuccessfully.

The energy of binding of a 4s electron to the various states of Fe II to produce the known low even terms and the corresponding values of n* are given in table 9.

TABLE 9

VALUES OF n* FOR 4s ELECTRON

Fe II		Fe I			Fe II		Fe I		
d^7	Level	d^7s	Term	n*	d^6s	Level	d^6s^2	Term	n*
a^4F	65573	a^5F	58645	1.368	a^6D	63700	a^5D	63700	1.313
		a^3F	53597	1.431	a^4D	71655		71655	1.238
a^4P	77174	a^5P	59624	1.357	b^4P	84531	a^3P	66153	1.288
		b^3P	54336	1.421	b^4P	89487		71109	1.242
a^2G	79545	a^3G	57829	1.378	a^4H	84952	a^3H	65562	1.294
		a^1G	54970	1.413	b^4H	89870		70480	1.248
a^2P	82061	c^3P	57725	1.379	b^4F	86337	b^3F	65696	1.292
		a^1P	54518	1.419	a^2F	91015		70374	1.249
a^2H	84040	b^3H	57934	1.376	a^4G	89129	b^3G	65345	1.296
		a^1H	55220	1.410	b^2G	94089		70305	1.249
a^2D	84217	a^3D	57992	1.376	b^4D	95183	b^3D	65811	1.291
		a^1D	55612	1.405	b^2D	99953		70581	1.247
b^2F	95699	d^3F	58653	1.368	a^2I	96576	a^1I	67263	1:277
		a^1F	55165	1.410	c^2G	97167	b^1G	67368	1.276
d^8s^2					a^2S	100927			
a^6S	87017				c^2D	101864	b^1D	67227	1.278
					c^2F	108614			

TABLE 10
Predicted Odd Terms Arising from 4p

Limits in Fe II		Septets			Quintets							Triplets								Singlets							
Config	Desig	P	D	F	S	P	D	F	G	H	I	S	P	D	F	G	H	I	K	S	P	D	F	G	H	I	K
d^6s	a^6D	x	x	x		x	x	x																			
d^7	a^4F						x	x	x					x	x	x												
d^6s	a^4D					x	x	x					x	x	x													
d^7	a^4P				x	x	x					x	x	x														
d^7	a^2G														x	x	x						x	x	x		
d^7	a^2P											x	x	x							x	x	x				
d^7	a^2H															x	x	x						x	x	x
d^7	a^2D												x	x	x						x	x	x			
d^6s	b^4P				x	x	x					x	x	x														
d^6s	a^4H								x	x	x					x	x	x									
d^6s	b^4F						x	x	x					x	x	x											
d^6s^2	a^6S	x				x																						
d^6s	a^4G							x	x	x					x	x	x										
d^6s	b^2P											x	x	x							x	x	x				
d^6s	b^2H															x	x	x						x	x	x
d^6s	a^2F													x	x	x						x	x	x		
d^6s	b^2G														x	x	x						x	x	x	
d^6s	b^4D					x	x	x					x	x	x												
d^7s	b^2F													x	x	x						x	x	x		
d^6s	a^2I																x	x	x						x	x	x
d^6s	c^2G														x	x	x						x	x	x	
d^6s	b^2D												x	x	x					x	x	x				
d^6s	a^2S												x								x					
d^6s	c^2D												x	x	x						x	x	x			
d^6s	c^2F													x	x	x						x	x	x		
Totals		2	1	1	2	6	7	6	4	2	1	4	10	14	14	12	8	4	1	2	6	8	9	8	6	3	1
Observed		2	1	1	2	7	7	6	4	1		2	5	8	7	10	7	3			1	4	4	5	3	1	
Exc. 7 Highest Limits		2	1	1	2	6	7	6	4	2	1	4	7	10	9	9	6	3		2	3	4	4	5	4	2	

Each d^7 limit has two associated d^7s terms and the first six d^6s^2 terms have two associated d^6s limits. The means of n^* for the pairs, weighted according to multiplicity, range from 1.378 to 1.392 in the first group and 1.273 to 1.284 in the second. The values of n^* for the d^6s^2 terms with only doublet limits lie in the latter range. The general means are: for $d^7 \rightarrow d^7s$ 1.385 with average deviation ±0.004 and for $d^6s \rightarrow d^6s^2$ 1.277, A.D. ±0.003. The greater binding energy for d^6s^2 corresponds to the completion of a pair of 4s electrons.

(11) THE HIGHER ODD TERMS

The addition of a 4p electron to the various limits gives rise to numerous triads of terms. The observed odd terms should include these (except for some of the highest limits) and a few terms involving a 5p electron. For the known 5p triad from a^6D the mean value of n^* is 2.971—greater by 1.25 than for the corresponding 4p triad. For the triads from a^4F, n^* should be about 3.11 for the quintets and 3.20 for the triplets, leading to levels near 54000 and 55000. These have not been found. Apart from these, the observed odd terms are almost certainly from 4p.

The predicted terms are listed in table 10.

The numbers of predicted and observed terms of each type are given at the bottom of the table. The deficiency of the latter indicates that many terms with high-lying limits have been missed. Omitting the seven highest limits gives the predictions in the lowest line, which are not far from the observed numbers.

The mean levels at which the various triads may be expected can probably best be estimated by assuming that the difference Δn^* between the mean $\bar{n}^*$ for the terms of a 4p triad and those for the related 4s term are the same as in the cases already discussed. This gives the results in table 11.

TABLE 11
Differences of n^*

Limit	High Multiplicity		Low Multiplicity	
	$\bar{n}^*$	Δn^*	$\bar{n}^*$	Δn^*
d^7 a^4F	1.861	+0.493	1.952	+0.521
d^6s a^6D	1.622	+0.310	1.737	+0.425
d^6s a^4D	1.832	+0.594	1.668	+0.430

For the remaining d^7 limits the values of n* (4s) are almost identical with their means—1.372 for the terms of higher multiplicity in a related pair and 1.413 for those of lower multiplicity. Adding the appropriate Δn^* gives 1.865 and 1.934, corresponding to term-values of 31516 and 29338. Proceeding similarly with d^6s, the differences in level between the limit and the 4p triad come out as follows (table 12):

TABLE 12

APPROXIMATE TERM VALUES—4p TRIADS

Limit	High Mult.	Low Mult.
d^7	31500	29300
d^6s High Mult.	42500	38000
d^6s Low Mult.	32400	39000

The term-values for d^6s apply to the groups of four triads related to the low triplet terms of d^6s^2. The singlet d^6s^2 terms have but two related triads. For these the values 42500 and 39000 have been adopted, as the other pair of term-values are affected by the mutual repulsion of terms of the same multiplicity.

The assignment of the terms to specific triads is complicated by considerable perturbations shown by the g-values (Part II, § 29) which indicate a good deal of sharing of identity among the levels, especially those with small J-values. The guiding principles of the present arrangement have been as follows:

(a) *Level*. The terms of a given triad are likely to be within 2000 cm^{-1} of the levels determined as above (which it is useless to predict within 1000 cm^{-1}).

(b) *Separation*. In general, limit-terms and low related terms of a wide internal separation are associated with odd terms of wide separation.

(c) *Intensity*. The terms of a triad will in general combine most strongly with the related low even term having the same limit in Fe II. Each d^7s term in Fe I has one related d^7p triad; most d^6s^2 terms have four—two of the same multiplicity and one each of multiplicity higher and lower by 2. The latter give intersystem combinations with the low term, which may be relatively faint. Combinations of d^7p terms with d^7s terms having different limits are usually stronger than those with d^6sp terms, and vice versa. On account of the Boltzmann factor, the population of high states is less than that of lower states, and their combinations with the same low term tend to be fainter. The combinations of a d^7s term with its related d^7p triad are always strong. Those of a d^6s^2 term with the lower of the related d^6sp triads of the same multiplicity are much weaker; with the higher triad they are stronger, but hardly comparable with d^7s–d^7p. This is clearly shown by King's determinations of f-values for Fe I and Ti I [28] and is a general

property of the spectra of the iron group, as is shown by the incidence of ultimate lines.[27] Further evidence of this has appeared in the present work. The combinations of the singlet d^7s terms are much stronger than those of the d^6s^2 singlets, so that the latter were among the last terms to be detected in the analysis.

(12) ODD SEPTETS AND QUINTETS

The predicted septet terms have been identified with certainty. The term y^{7}P° is fully confirmed by the Zeeman effect. Its components are arranged, as was to be expected, in the normal order, with the smallest J lowest, while almost all terms of Fe I are inverted. The term-value 46596 (n* = 1.535) is unusually great for 4p. Very few examples of the configuration $d^{n-3}s^2p$ are known in other spectra.

The quintet terms may be assigned with considerable confidence. By applying the approximate term-values of table 12 to the limits in table 9, the estimated mean levels of the triads in table 13 are obtained. For the limit a^{6}S the separation for d^6sp has been taken as a rough guide. The d^7p triad with limit a^{4}P should combine more strongly with a^{5}P, and the d^6sp with b^{4}P. This puts v^{5}P°, u^{5}D° in the former, and leaves x^{5}P°, w^{5}D° for the latter—all near the predicted levels. The relative levels then place y^{5}S°, z^{5}S°.

The ^{5}P° term from a^{6}S should be related to y^{7}P°, much like the ^{5}P°, ^{7}P° terms from 3d^{5}4p in Mn II. This ^{7}P° term has normal separations (−264, −176) while the ^{5}P° term is inverted (+114, +72). In Fe I y^{7}P° has separations −215, −155 and w^{5}P° +176, +97—much smaller than the other ^{5}P° terms. The difference ^{5}P$_3$°−^{7}P$_4$° is 4564 in Mn II and 5715 in Fe I. This identification is conclusive.

Their levels suffice to assign y^{5}G°, z^{5}H° to a^{4}H. The related ^{5}I° could be detected only by combinations with a^{5}F, which should be very faint. The triad with limit b^{4}F is reasonably filled by v^{5}D°, w^{5}F°, x^{5}G°. The higher one with limit a^{4}G evidently contains v^{5}F° and w^{5}G°. The ^{5}H° term has not been found. Two lines at 38628.18 and 38713.63 cm^{-1} of intensities 8 III and 6 III by their behavior in the furnace come from a^{5}F or a level a little higher. If they are transi-

TABLE 13

ODD QUINTET TERMS

Limit	Est. Level	Adopted Terms					
a^{4}P	46000	y^{5}S°	44512	v^{5}P°	47967	u^{5}D°	46721
b^{4}P	42000	z^{5}S°	40895	x^{5}P°	42532	w^{5}D°	43499
a^{4}H	42000	y^{5}G°	42784	z^{5}H°	43321	^{5}I°	
b^{4}F	44000	v^{5}D°	44415	w^{5}F°	44243	x^{5}G°	45608
a^{6}S	44000:			w^{5}P°	46137		
a^{4}G	46000	v^{5}F°	47606	w^{5}G°	47363	^{5}H°	
b^{4}D	53000	t^{5}P°	53388	^{5}D°	(53891)	^{5}F°	(54013)

[28] King, R. B., and A. S. King, *Mount Wilson Contr.* No. 581, 1938; *Astrophys. Jour.* 87: 24, 1938.

[27] Meggers, W. F., *Jour. Optical Soc. America* 31: 39, 1941.

tions to the $^5H°$ term, it must be near 46000. The high terms $u^5P°$, $t^5D°$, $u^5F°$ have already been assigned to $(a^6D)5p$. The corresponding septet triad should be near 50000, but has not been identified. This leaves only $t^5P°$, which may be assigned tentatively to the triad with b^4D as limit. The unclassified levels $10_8°$ and $12_5°$ have positions and g-values agreeing well with $^5D_3°$, and $^5F_5°$ and are given in parentheses; but the other levels of these terms have not been identified. The quintets are now well accounted for.

<div align="center">TABLE 14</div>

<div align="center">ODD TRIPLET TERMS FROM 4p</div>

Limit	Est. Level	Adopted Terms						Related Low Term
a^4F	36000	$y^3D°$	38175	$y^3F°$	36686	$z^3G°$	35379	a^3F
a^4D	33000	$z^3P°$	33947	$z^3D°$	31322	$z^3F°$	31307	$[a^5D]$
a^4P	48000	$y^3S°$	47556	$y^3P°$	46727	$w^3D°$	47017	b^3P
a^2G	48000	$x^3F°$	46889	$v^3G°$	49460	$y^3H°$	49434	a^3G
a^3P	51000	$8_1°$	52857?	$v^3P°$	52916:	$u^3D°$	51969	c^3P
a^2H	53000	$u^3G°$	51373	$w^3H°$	52431	$y^3I°$	52655	b^3H
a^2D	53000	$w^3P°$	50186:	$t^3D°$	52213:	$u^3F°$	56592:	a^3D
b^4P	47000	$z^3S°$	46601	$x^3P°$	48304	$x^3D°$	45220	a^3P
b^2P	57000	$^3S°$		$^3P°$		$^3D°$		
a^4H	47000	$y^3G°$	45294	$z^3H°$	46982	$z^3I°$	45978	a^3H
b^2H	57000	$^3G°$		$u^3H°$	56334:	$x^3I°$	57027	
b^4F	48000	$v^3D°$	49135	$w^3F°$	49108	$x^3G°$	47834	b^3F
a^2F	58000	$^3D°$		$^3F°$		$^3G°$		
a^4G	51000	$v^3F°$	51304:	$t^3G°$	53983:	$x^3H°$	51023:	b^3G
b^2G	62000	$^3F°$		$^3G°$		$^3H°$		
b^4D	57000	$^3P°$		$^3D°$		$^3F°$		b^3D
b^2D	68000	$^3P°$		$^3D°$		$^3F°$		
b^2F	64000	$^3D°$		$^3F°$		$^3G°$		d^3F
a^2I	54000:	$^3H°$		$^3I°$		$^3K°$		a^1I
c^2G	54000:	$^3F°$		$^3G°$		$^3H°$		b^1G
a^2S	58000:			$^3P°$				
c^2D	59000:	$^3P°$		$^3D°$		$^3F°$		
c^2F	64000:	$^3D°$		$^3F°$		$^3G°$		

<div align="center">(13) TRIPLETS</div>

Table 14 is similar to the last, except that the low even terms in Fe I which are related to the triads are given. The triads already located are included. The numbers of odd triplet terms to be anticipated below 54000 and of those observed are as follows:

Term	$^3S°$	$^3P°$	$^3D°$	$^3F°$	$^3G°$	$^3H°$	$^3I°$
Predicted	3	5	7.	6	6	4	2
Observed	2	5	8	5	7	4	2

The agreement is surprisingly good in view of the roughness of the prediction. From 54000 to 62000 the comparison gives:

Term	$^3S°$	$^3P°$	$^3D°$	$^3F°$	$^3G°$	$^3H°$	$^3I°$	$^3K°$
Predicted	1	4	4	5	4	4	2	1
Observed				2	3	3	1	
Omitting faint combinations	1	2	3	3	3	2	1	

Many of the predicted terms have evidently been missed.

In assigning the observed terms, so far as practicable, to their limits, the intensities are important, since each triad has an associated low level of the same multiplicity with which its combinations should be strong. Table 15 gives that of the strongest line in each multiplet, omitting predicted lines present in the sun (§ 23). Values not in parentheses are on King's scale and fairly comparable. Those in parentheses are on a great variety of scales. Most of these lines are faint. For the combinations with a^5D, which lie far in the ultra-violet, the intensities are on a more open scale. The symbol "†" denotes that the intensities in the multiplet are seriously abnormal. The maximum separation of each term is given. When only two components are known, the separation is followed by +. Inverted separations are listed as positive, the few normal ones as negative. The separations of the odd terms average much smaller than for the even terms, doubtless because the 4p electron by itself would produce a considerable separation in the normal direction. Terms already assigned are omitted. Of the three $^3I°$ terms, $y^3I°$ combines strongly with b^3H, and belongs to its triad; and the others to a^3H. All three are near the predicted levels. Intensities and levels connect $u^3G°$, $w^3H°$, with b^3H and place $y^3G°$, $z^3H°$ in the lower a^3H triad. The one related to a^3G consists of $y^3H°$, $v^3G°$ and either $x^3F°$ or $w^3F°$; strong combinations with a^5P connect $y^3P°$, $w^3D°$ with a^4P; $x^3P°$, $x^3D°$ combine well with a^3P; $u^3D°$ is related to c^3P, and either $w^3P°$ or $v^3P°$ would fit, though the wide separation of the latter is favorable. The two known $^3S°$ terms should belong to the lower two of these triads. The uncertain choice between them depends on the strong combination of $z^3S°$ with a^5D. Intensities and levels suggest assigning $x^3G°$, $w^3F°$, $v^3D°$ to b^3F (leaving $x^3F°$ for a^3G). Beyond this, assignments are difficult; $x^3H°$, $t^3G°$, and $v^3F°$ may be provisionally connected with b^3G and $w^3P°$, $t^3D°$, $u^3F°$ with a^3D.

It is unprofitable to attempt specific configuration assignments for the higher terms, and some of those already made and marked with colons in the table are doubtful. The lowest missing term is the $^3S°$ related to c^3P, which should be near 51000. The only unassigned odd level with J = 1, $8_1°$, is in the expected place, and combines mainly though irregularly with the low ^3P term. The well-determined value of g for this level is 1.246—greatly perturbed from a theoretical 2.000—but the neighboring levels $z^1P°$, $u^3D_1°$,

TABLE 15

INTENSITIES OF TRIPLET COMBINATIONS

d^6sp, d^7p		d^6s^2						d^7s									d^8
Desig		a^1D	a^3P	b^3D	b^3F	b^3G	a^3H	a^5P	a^5F	b^3P	c^3P	a^3D	a^3F	d^3F	a^3G	b^3H	c^3F
	Sep	978	1660	-52	398	555	398	377	1226	213	756	398	992	-105	534	522	892
z^3S°		(10)	1					2		6		(2)					
y^3S°		(1n)	3					2		10		3	(1)				
y^3P°	229	(3)	4	(1)				10	(2)	12		(2)					
x^3P°	211	(25)	6	(2)				4	6	6	5	(2)	(1)				1
w^3P°	-236		5	(1)	(1)			(1)		4	7	5					(1)
v^3P°	892+		10	3				(3)		7	2†	(1)†					
x^3D°	331	(15)	8		4			2	4	12	5†	(1)	12		(1)*		10
w^3D°	255	(3)	1	(1)†	1	(1)		15	(7)	12	(1)	(1)	5†	(1)†	4		40
v^3D°	163		(2)*	(1)†	3	(1)*		3	(4)	4†	(1)	(2)†		3*	3		(1)
u^3D°	543		5	(1)	4		(1)		(1)	(1)	12	2		2	(1)		(3)
t^3D°	502		5†	(1)	6†		(1)				(1)†	8		2			(2)
s^3D°	322+	(1)			(2)				(2)			3					(1)†
x^3F°	308	(2)	(1)	(1)	4	(3)	(1)	20	(6)	5	(1)		8	(2)	10		8
w^3F°	324		(1)	(2)	8†	2	(1)	2*	(4)*	(1)			(2)	3*	12		4
v^3F°	-103			(2)	4	3	2	(1)?		(1)	2	5	3		6	3	(1)
u^3F°	266				1	(2)	(2)	(3)			8		(4)		(3)†	(3)†	
t^3F°	159				4	(2)					(1)?		(2)		(3)		
y^3G°	268	(2)	(2)		3	6	10		6				10		3	(1)	
x^3G°	-22		(1)		6	(1)	(1)		(20)				5	(1)†	3†	(1)	
w^3G°	244				2	(2)	(1)	8	(2)		(1)		3†		3	(1)	(1)
v^3G°	390				4	7	4		(1)			(1)	3		20†	(1)	4
u^3G°	452				4	(2)	6				(1)	1	(5)	4	10	10	(2)
t^3G°	617			(1)		4	(3)		(20)†			(2)	(2)	(4)	6	10	(2)
s^3G°	192				(3)	3	(2)						(4)		7		
r^3G°	438				6	(2)											
q^3G°	129				(4)	(1)					(3)†	(2)†	(2)?†			(2)†	
z^3H°	124	(1)			2	5	8	3	(6)				2		15	(4)	5
y^3H°	293				(1)	5†	(2)						2		20	3	4*
x^3H°	45+					3	3	(1)					(1)		(2)	(1)	(1)
w^3H°	337				(2)	5	15								(2)	12	(-)†
v^3H°	-60				(2)	(2)†	(4)						(1)		10	5	
u^3H°	89					(1)†	4					(3)			5	5	
t^3H°	392				(4)		(25)						(1)		(1)	10	
z^3I°	158				(1)		8		1								5
y^3I°	244					(1)*	3										20
x^3I°	77					(-)†	5								(2n)		10

    * Blend.   † Multiplet intensities abnormal.

and $u^5P_1^\circ$ have g-values which are too great by 0.266, 0.200, and 0.133, enough to make up four-fifths of the difference. This possibility is noted in table 14.

(14) SINGLETS

The odd singlet terms to be expected from limits below 95000 are given in table 16. The estimated differences from the limits are 29000 for d^7 and 39000 for d^6s. The predicted and observed numbers of terms are given at the bottom. Some terms with large and small J have been missed. The predicted levels are closely packed, and assignment to configurations must depend mainly on the intensities. The first four triads in table 16 have related low even singlet terms; the others from d^6sp are related to low triplets and likely to give fainter combinations. The observed intensities of combinations between the known odd singlets and the relevant low terms are given in table 17. It is clear that z^1H°, z^1F° belong with a^1G; z^1I°, y^1H° with a^1H; y^1D°, z^1P° with a^1P; and w^1D° probably with a^1D. The first two triads may be filled out with z^1G° and y^1G° (though the latter is very low). These nine levels account for all the strongest singlet combinations. It is hardly practicable to assign the others. Many of them must come from d^6sp.

TABLE 16
Odd Singlet Terms

Limit	Est. Level	Adopted Terms			Rel. Low Term
a²G	50000	z¹F° 50587	z¹G° 47453	z¹H° 48383	a¹G
a²P	53000	¹S°	z¹P° 53230	y¹D° 51708	a¹P
a²H	55000	y¹G° 48703:	y¹H° 53722	z¹I° 53094	a¹H
a²D	55000	¹P°	w¹D° 55754	¹F°	a¹D
b²P	50000	¹S°	¹P°	¹D°	a³P
b²H	51000	¹G°	¹H°	¹I°	a³H
a²F	52000	¹D°	¹F°	¹G°	b³F
b²G	55000:	¹F°	¹G°	¹H°	b³G

Type	S	P	D	F	G	H	I
Numbers predicted	2	3	4	4	5	4	2
Numbers found		1	4	4	5	3	1

(15) UNCLASSIFIED LEVELS

The even levels called 1, 2, and 3 combine with septet terms and are at the right level for the pentad (a⁶D)5d, while 4 may fit into the incomplete quintet pentad (a⁴D)4d. The high odd levels fall in a region containing many anticipated terms; but $2_2°$, which is undoubtedly real, lies low enough to be puzzling.

Two even levels at 40871 (J = 3) and 41178 (J = 2) present a perplexing problem. Both are confirmed by several combinations, as is shown in table 18, which gives the intensities and the residuals in 0.01 cm⁻¹. These are given in the sense o–c for transitions from lower terms, but c–o for transitions to higher terms, so that a change in these levels affects all residuals in the same sense. Predicted solar lines

are here included, since the majority of them are probably real (§ 22). The intensities strongly suggest ³D₃, ³D₂; but the levels are far too low for any configuration including a 5s or 4d electron. The only ³D term from the lower configurations which has not already been unequivocally located comes from d⁷s and has d²D for limit. The regularities shown in table 3 indicate that this term should be near 53000. It appears very improbable that so enormous a displacement can be due to perturbations, especially since those of the lower terms of the overlapping configurations d⁶s² and d⁷ are small.

There are predicted ³P and ³F terms of d⁶s², related to b³F and b³P of Fe III, but by table 2 these should be near 48000.

The singlet ¹F₃ from d⁶s² should be close to 41200, and ¹D₂ from d⁸ roughly at 43000; but the combination-intensities of the observed levels are irreconcilable with their being singlets, though they do indicate that the two are related.

The writers can suggest no solution of the difficulty. In recognition of it, they have deliberately departed from the usual nomenclature to the extent of calling these two levels X₃ and X₂ rather than assigning numbers as usual.

The general result of this analysis is that the iron arc spectrum, despite its complexity, is highly regular. All the low even terms predicted by theory have been found close to their anticipated position except two which should give few and faint lines and others whose combinations should be in the infra-red. The high even terms are also well identified, though not so completely. The lower odd terms (below about 55000) are also satisfactorily accounted for except for a couple which could be detected only through highly improbable combinations, and a few of low J-value.

TABLE 17
Singlet Combinations

	u¹P	a¹D	a¹G	a¹H	c³P	a³D	a³G	b³H	a³P	b³D	b³F	b³G	a³H	b¹D	b¹G	a¹I
z¹P°	3	3			4	1			(2)					(2)		
z¹D°		7			(1)	(1)			(1)	(1)		(1)*		(2)		
y¹D°	7	3			2	9	(1)*			(2)*	(1)	(1)*		(2)		
x¹D°	3n*	(1)			(1)	(1)	2			(1)		1*		(1)		
w¹D°	(4)	20			(1)*	3			(1)	(1)				(1)		
z¹F°		4	8		(1)	(2)			(2)	(1)	(1)	(1)		(1)	(1)	
y¹F°		2	3			(1)			(2)					m	(2)	
x¹F°		3	4		(1)	(1)*				(1)	(—)	(1)			(2)	
w¹F°		2	2			(2)*	5			(1)		2.		(1)		
z¹G°			7	3			10	(1)		(2)	1	(1)			(1)	
y¹G°			15	4			10	(2)*			(1)	(1)	(1)		(2)	
x¹G°			7	(2)		(1)*	(2)	(2)			(1)		(1)		(3)*	
w¹G°			m	2			(—)	(2)*				(1)			2	
v¹G°				6				(1)							(1)	
z¹H°			20	m			3	(2)				5	(1)		(2)	
y¹H°				10			10					2*				
x¹H°			(3)	6			(2)						(2)			2
z¹I°				15				10					(1)			(1)

* Blend.   m Masked.

TABLE 18

COMBINATIONS OF X-LEVELS

	X_3	X_2		X_3	X_2
$w^1F_3°$	*+04 (−3⊙)	+01 (−3⊙)	$z^5P_3°$	−09 (−3⊙)	
			$z^5P_2°$	−03 (−3N⊙)	
$v^1G_4°$	+05 (1)				
			$z^5D_4°$	−01 (−3⊙)	
$v^3P_2°$	−04 (−1⊙)		$z^5D_3°$	−11 (−3⊙)	+13 (−3⊙)
			$z^5D_2°$	+08 (−3⊙)	+05 (−3⊙)
$z^3D_3°$	+03 (20V)	+12 (−3⊙)	$z^5D_1°$		+26 (−3⊙)?
$z^3D_2°$	−05 (3)	+11 (10)			
$z^3D_1°$		+01 (3)	$z^5F_2°$		−07 (−3⊙)
			$z^5F_1°$		+06 (−3N⊙)
$u^3D_3°$	−06 (2)				
$t^3D_3°$	0 (2)				
$t^3D_2°$	+01 (−3⊙)	*−04 (−1⊙)			
$s^3D_3°$	−11 (6IV?)				
$s^3D_2°$		−05 (3V)			
$z^5F_4°$	+10 (5)				
$u^3F_3°$		−07 (1)?			

* Blend.   ⊙ Predicted line present in solar spectrum.

Not many of the numerous predicted odd terms above this level have been identified. Others may be found by future intensive observations of faint lines.

(16) UNCLASSIFIED LINES

The comprehensive list of lines upon which the present analysis was based includes great numbers of faint lines which have not been classified. It is probable that many of these are not really due to Fe I. In preparing a list for this purpose, much more trouble will be caused by excluding one real iron line as doubtful than by including several impurity lines. As the analysis advances, the latter will accumulate more and more in the unclassified residuum—while, in a spectrum as complex as this, a few of them will coincide by chance with wave-lengths predicted from term values and creep into the "classified" list. In the region between 6600 and 2975A the more obviously dubious "observed" lines were rejected, and a statistical comparison of the rest was made with the solar spectrum (§ 24), with the conclusion that the majority are accounted for in the sun and are probably really due to iron.

The strongest unclassified lines of wave-length greater than 2000A are listed in table 19. All those for which King has given a temperature classification are included with the exception of four which are clearly due to Fe II. For other observers the limit was set at intensity 3 (on the narrow scale) except in the far ultra-violet, where the scale was much more open. Of these 100 lines, 20 lie between λ9700 and λ6600, 26 between λ6600 and λ2975, and 54 short of

this. Of the 46 which are accessible in the sun, 42 are present or accounted for by blending or masking. It is probable, therefore, that almost all the lines in this list are really due to iron. Almost, if not quite, all the lines of wave-length less than 3000A must arise from transitions from known low even terms to unknown high odd ones (of which there are still many). The temperature class shows that the lines of longer wave-length arise from higher levels.

VI. THE SUN AS A SOURCE FOR THE IRON SPECTRUM

(17) PREDICTED IRON LINES IN THE SOLAR SPECTRUM

It has long been recognized that the arc spectrum of iron is more fully exhibited among the Fraunhofer lines of the solar spectrum than by any laboratory measures so far published. Many lines, predicted from the term values, agree so closely with unidentified solar lines that the coincidences cannot reasonably be attributed to mere chance.[28] Many accidental coincidences must, however, occur in a general comparison of predicted with solar wave-lengths, and an investigation of their probable number is in order. The present work offers ample material for statistical study.

(18) ACCEPTANCE OF PREDICTED SOLAR LINES

In the course of the analysis of the spectrum, wave numbers were computed for all combinations from low even to odd levels and for the more probable transitions from odd to high even levels, not pro-

[28] Russell and Moore, *Mount Wilson Contr.* No. 365, 1928; *Astrophys. Jour.* 68: 151, 1928.

hibited by the inexorable inner-quantum and parity rules. This gave about 6500 predicted positions of possible lines—with the certainty that a large majority, though not theoretically forbidden, must be far too faint to be observable. The resulting wave-lengths were compared with the "Revised Rowland Table" [29] (R. R.). This line list is known to be practically complete, except near the limit in the ultra-violet set by atmospheric ozone, and in the red beyond λ6600, where Rowland's plates were greatly inferior to modern ones.

Much progress has, however, been made in the past fifteen years in the identification of solar lines then unassigned, and in the improvement of earlier identifications. A systematic study of these has been made by one of the writers (C. E. M.) in connection with the preparation of a revised and extended edition of the Multiplet Table.[30] This investigation has added about 2850 identifications to those in the R. R. Though not yet finished, it is complete enough to provide a reliable basis for this statistical investigation. Of the predicted iron lines, 1928 agreed with observed solar lines closely enough to warrant calling them coincident, blended, or masked, in the same sense in which these terms have been applied to other lines in the general study.

The examination was made multiplet by multiplet, noting first the absences and apparent coincidences. The limits of tolerance were necessarily a matter of judgment, depending on the wave-length, intensity, and diffuseness of the solar line; but they represent the product of years of experience, and are believed to be fairly consistent.

The coincidences were divided into three classes:

(a) *Unblended*, when the solar line is not otherwise identified and the agreement in wave-length and esti-mated intensity is such that a line reliably observed in the laboratory would be described as present in the sun.

(b) *Blended*, when the solar line (especially if dif-fuse) disagrees slightly in wave-length, or is somewhat too strong, and is probably a blend of the line under consideration with some other line of known or un-known origin.

(c) *Masked*, when some neighboring strong line would conceal the presence of a line of the expected position and intensity. The decisive test was, how-ever, based on the position of the predicted line in its multiplet. If the intensity anticipated on this basis was very small, the line was rejected, especially in the case of blends.

The predicted lines which passed all these tests, and were therefore accepted as "present," or "present blended," were graded as good, fair, or poor, with the position in the multiplet, the agreement in wave-

TABLE 19

THE LEADING UNCLASSIFIED LINES OF FE I

Ref†	I A	Int	T C	Ref	I A	Int	T C
F	9666.59	2	V	W	2786.81	(3)	
F	9637.55	2	V	G	2778.842	3	III
F	9529.31	2n	V	V	2778.075	3	III
E	9430.08	3	IV*	G	2773.232	2	III
O	8145.47	4	V	G	2757.856	(3)	
O	8024.50	3n	V	V	2737.833	(3)	
E	7994.473	20	IV*	G	2698.162	(4)	
O	7808.04	6n	V	V	2695.542	(3w)	
O	7573.53	2n	V	V	2664.042	(3w)	
L	7546.177	4	IV*	G	2615.420	(3)	
R	§7376.434	3n	V	G	2608.576	(3)	
V	7254.649	2	IV*	G	2606.644	(4)	
V	6975.46	3n	V	G	2604.864	(3)	
V	6902.80	3n	V	G	2604.751	(3)	
M	6881.46	1	V	G	2603.553	(4)	
V	6838.86	3n	V	G	2600.202	(3)	
M	6793.62	1	V	V	2594.046	1	III
V	6755.609	3	IV*	G	2592.285	(3)	
D	6726.78	(3)		G	2591.252	(3)	
V	6609.56	1	V	V	§2588.010	8	III
V	6528.53	2	V	G	2582.297	6	III
V	6501.681	4	IV*	G	2578.825	(3)	
J	6042.092	2	V	C	2575.744	(4)	
R	5036.294	6		G	2553.193	(7)	
J	4552.544	(3)		C	2551.094	(8)	
J	4237.162	2	V	G	2546.864	(4)	
W	4100.17	(3)		G	2533.802	4	IV
W	3851.58	(4)		W	2527.16	(5)	
J	3739.527	3	IV	G	2525.021	(7)	
V	3681.774	1	IV	G	2523.658	(6)	
V	3680.801	1	IV	W	2523.11	(5)	
V	3656.227	3n	IV	G	2520.968	(4)	
G	3634.698	4n	IV	G	2513.328	(3)	
J	3617.317	2	IV	G	2505.627	(4)	
J	3616.572	3n	IV	G	2505.485	(5)	
G	3614.550	2n	IV	W	2460.31	(4)	
J	3587.752	3	IV	G	2436.344	(10)	
W	3506.40	(3)		G	2435.865	(3)	
V	3438.306	(3w)		C	2431.025	(20)	
V	3262.284	4	IV	G	2301.171	(6)	
V	3179.538	3	IV	C	2165.861	(20)	
V	3139.908	4n	V	C	2163.368	(10)	
W	3136.17	(3)		X	2158.49	(6)	
G	3126.175	8n	IV	N	2111.274	(20)	
W	3102.71	(4)		N	2109.861	(25)	
G	2991.632	5n	IV	N	2077.507	(20)	
G	2945.050	3	IV	N	2041.204	(25)	
W	2927.55	(3)		N	2017.090	(15)	
V	2865.191	(3)		N	2007.215	(15)	
G	2799.149	1	III	N	2006.260	(15)	

[29] Revision of Rowland's Preliminary Table of Solar Spectrum Wave-lengths. *Publ. Carnegie Inst. Washington*, No. 396, 1928.
[30] *A Multiplet Table of Astrophysical Interest*. Princeton, 1933.

† The reference numbers in this column are the same as those used in table B—see bibliography, page 169.
§ Blend with Fe II.

length, and the intensity as criteria. This grading was decidedly severe; for example, no members of multiplets containing only predicted lines and no lines involving improbable combinations, were called "good." This whole process is substantially the same that was applied to lines of less abundant elements observed in the laboratory, except that laboratory intensities were not available as guides.

(19) SELECTION OF GROUP FOR STATISTICAL STUDY

The essential condition in this case is that the group shall be selected *impartially*, by some method which neither favors nor discriminates against the characteristics under investigation. A desirable, though not necessary, condition is that the grouping should exclude irrelevant material in which these characteristics are not present.

The complete list of predicted possible lines satisfies the first condition, but not the second, for it is overloaded with transitions so improbable that there is no hope of their giving solar lines. To escape this the

statistical study has been confined to multiplets in which at least one line (observed in the laboratory or predicted) satisfies the criteria of acceptance just described. This meets the second condition efficiently; but care is required about the first. When one or more lines of the multiplet have been observed in the laboratory, there is no assignable reason why the remaining lines should be more or less likely than the average to coincide accidentally with solar lines—though the chance of real coincidences is good. When no observed line is present, *one* coincidence with a predicted line in each multiplet is forced by the method of selection, but any other coincidences should be statistically free, just as in the previous case. The exclusion of one predicted line from each multiplet of the second type leaves statistically unbiassed material. All components of each multiplet, except observed (laboratory) lines, or the one predicted line, were included in the discussion, irrespective of their anticipated intensity.

A large group of predicted lines was thus obtained, free from statistical bias, and yet likely to contain a

TABLE 20

PREDICTED LINES OF FE I IN THE SOLAR SPECTRUM

λ		2975–4000	4000–5000	5000–6000	6000–6600	All	
Accepted Unblended	Good	82	82	94	10	268	
	Fair	127	211	161	39	538	
	Poor	46	59	43	10	158	
	Total		255	352	298	59	964
Blended with unidentified lines	Good	5	5	3	1	14	
	Fair	6	10	2	4	22	
	Poor		3	2		5	
	Total		11	18	7	5	41
Blended with identified lines	Good	22	11	7		40	
	Fair	40	26	13		79	
	Poor	15	7	7		29	
	Total		77	44	27	0	148
Rejected	Unblended		42	28	9	4	83
	Blended		94	74	63	19	250
Masked			250	122	51	19	442
Absent			167	240	278	142	827
Total			896	878	733	248	2755
Lines excluded (one per multiplet	Unblended		55	77	60	9	201
	Blended unidentified			1			1
	Blended identified		9		1		10
Available accepted lines	Unblended		200	275	238	50	763
	Blended unidentified		11	17	7	5	40
	Blended identified		68	44	26	0	138
Total available lines			832	800	672	239	2543

fair proportion of lines present in the sun. It includes members of 614 multiplets, of which 402 contained observed lines, and 212 predicted lines only. Counts of these lines were made separately for four spectral regions, as summarized in table 20. When two predicted lines coincided within the tolerance with one solar line, both were counted. The numbers of lines excluded (one per multiplet, as described above) and the numbers remaining as available for statistical discussion are given at the foot of the table.

(20) THEORETICAL PROBABILITY OF ACCIDENTAL COINCIDENCES

The elementary theory of accidental coincidences between spectral lines is well known.[31] If M lines (described as Group I) are distributed at random over an interval of X units, the probability that an arbitrarily chosen wave-length will fall within a distance x from one (or more) of them is $P(x) = 1 - e^{-2mx}$ where $m = M/X$; and the probability that the interval i between two successive lines of Group I lies between i and $i + di$ is $q(i) = me^{-mi}di$.

The observed solar lines are, however, not distributed at random, for pairs or groups too close to be resolved are measured as single lines. Fortunately, this simplifies the analysis. We may treat the lines of Group I approximately as if they were sharp-edged strips of width y which will be blended if the separation of centers is less than y. Suppose that we have another set of lines, Group II, of width z, which are distributed at random. Two lines, one of each group, will merge if their centers are separated by less than the coincidence-interval $c = \frac{1}{2}(y + z)$. If the lines of Group II are the fainter, we may assume $y > z$. We may now select from the whole range X a coincidence-range C, defined as follows. From the center of every unblended line of Group I lay off an interval c in both directions, and from the outer components of every blend lay off c outward. The whole range built up of their elements, disregarding overlapping, constitutes C. The probability that an arbitrary line of Group II will "coincide" with something belonging to Group I is then $\frac{C}{X}$, and the chance that it will not, $1 - \frac{C}{X}$. If there were no overlapping, C could be very easily found. Consider any individual element of the coincidence-interval of width w and the lines of Group II which, in a large number of trials, "coincide" with it. Their centers must fall in this interval and are distributed at random. Hence if $\bar{d}$ is the average distance, regardless of sign, of one of them from the center of the element, $\bar{d} = \frac{1}{4}w$. Summing for all the separate elements, $C = \Sigma w = 4\Sigma\bar{d}$.

For a single trial, there will usually be only one value for d in each element, and only a part of the elements of C will be used, but the general mean value D of d will approximate that for many trials, within the usual uncertainty arising from finite sampling. Let M' be the number of elements (which will be less than M on account of blending in Group I).

Then $D = \Sigma \bar{d}/M'$ and $C = 4M'D$. (1)

If overlapping occurs, equation (1) still holds good provided that each of the confluent portions is divided into as many sections as there were originally discrete elements, and if the residual distances d are measured from the midpoint of each section. In practice, d is the difference between the wave-length of some predicted line (of Group II) and that of some component (presumably the nearest) of Group I as blended— that is, of some solar line. For the most frequent case where each element is a single line let the separation of their centers be $2s$. The range of d will be from 0 to c on one side, and 0 to s on the other, and the numerical mean $\bar{d} = \dfrac{c^2 + s^2}{2(c + s)} = \dfrac{c + s}{4} + \dfrac{v^2}{4(2c - v)}$ where $v = c - s$. The first term gives the approximation just discussed, the second, a small correction. The minimum value of s is $\frac{1}{2}y$, so that v ranges from 0 to $\frac{1}{2}z$. Assuming the distribution to be uniform over this range (which is good enough for this small term), the correction is found to be $\dfrac{z^2}{96c} + \cdots$. The ratio of this to the leading term is $\dfrac{z^3}{24c(c + s)}$ which at maximum, when $z = y$, is less than 0.03. As the number of confluent elements is a rather small part of the whole, the net correction to equation (1) will be less than 1 per cent. The statistical uncertainty of $\bar{D}$ is much greater than this unless the number of lines in Group II exceeds 1000, so that equation (1) is adequate in practice and it is needless to investigate the less probable case of confluence between a wide and a narrow element.

If a second group of lines ($1b$) appears in the part of the spectrum left free by the original group ($1a$), the coincidence-range for these may be found in exactly the same way. If M_b' is the observed number of elements in the group and D_b the mean residual, $C_b = 4M_b'D_b$. This automatically eliminates the complications arising from masking of lines of Group $1b$ by those of $1a$. The probabilities of coincidence of a line of Group II with elements of Group $1a$, $1b$, $\cdots$ will be:

$$P_a = 4M_a'D_a/X; \quad P_b = 4M_b'D_b/X \cdots. \quad (2)$$

If there are N lines in Group II, the probable numbers of accidental coincidences will be NP_a, NP_b.

[31] Cf. Russell and Bowen, Mount Wilson Contr. No. 375, 1929; Astrophys. Jour. 69: 196, 1929.

(21) PREDICTED NUMBERS OF ACCIDENTAL COINCIDENCES

The numbers M' of solar lines have been counted in a copy of the Revised Rowland in which new identifications were entered to date. As this study is not quite completed, the results are not definitive—though adequate statistically—and only a single count was made. The solar lines were divided into two groups.

Group Ia. *Identified Lines*: All solar lines which agree, whether as unblended or blended, under the rules of acceptance already described, with lines, of whatever origin, which have been observed in the laboratory. Observed lines of Fe I, predicted lines of other elements which pass the conditions of acceptance, and all lines shown by observation to be produced in the earth's atmosphere, are included. Blends are counted only once.

Group Ib. *Unidentified Lines*: All solar lines for which no identification as just defined is available. Predicted lines of Fe I were completely disregarded in both groupings. The numbers of these lines for the four ranges of wave-length are given at the top of table 21. These sums should equal the numbers of lines between the given limits in the R. R. which may be found by inspection. The small differences represent the errors of the single approximate count and are statistically negligible.

Next follow the mean residuals $\bar{d}$ (in Angströms) between the predicted and solar wave-lengths for the groups of lines described in table 20. They increase moderately from the "good" to the "poor" cases, and considerably more with wave-length—mainly because the widths of the solar lines increase. They are greater for the rejected lines, since poor agreement was one factor in rejection, and greater still for the masked lines, since those which mask them are strong. Finally come the probabilities [eq. (2)] of accidental coincidences for a wave-length selected at random.

(22) PHYSICAL REALITY OF PREDICTED LINES

The numbers of predicted and observed coincidences are given in table 22. The sums for the separate regions are statistically preferable to the values calculated for the whole range together, which are given in the last line. The discordances are small, and indicate that the present subdivision is adequate.

The evidence of this table is decisive. The numbers of observed coincidences with unidentified solar lines are more than three times greater, in each of the four parts of the spectrum, than can be accounted for by chance, while those with otherwise identified lines show only a small excess, and the "absences" are much fewer than for a chance distribution. This puts it beyond doubt that a large majority of the unidentified solar lines which passed the conditions of acceptance are really due to iron.

TABLE 21

PROBABILITIES OF CHANCE COINCIDENCES

λ			2975–4000	4000–5000	5000–6000	6000–6600	All
Numbers of solar lines	Identified	M_a'	5507	3131	2280	688	11606
	Unidentified	M_b'	2300	2602	1651	584	7137
	Sum		7807	5733	3931	1272	18743
	R. R.		7803	5737	3960	1280	18780
Mean residuals $\bar{d}$ between predicted lines of Fe I and identified solar lines	Blended (accepted)	G	0.011	0.014	0.017		0.0125
		F	0.008	0.013	0.010		0.0099
		P	0.011	0.006	0.016		0.0107
		All	0.0092	0.0118	0.0133		0.0108
	Blended (rejected)		0.0138	0.0158	0.0170	0.024	0.0156
	Masked		0.0225	0.0256	0.0373	0.0410	0.0260
Mean for all identified lines (D_a)			0.0180	0.0200	0.0236	0.0312	0.0202
Mean residuals for unidentified solar lines	Unblended (accepted)	G	0.007	0.009	0.012	0.006	0.0093
		F	0.008	0.010	0.013	0.016	0.0111
		P	0.009	0.013	0.015	0.029	0.0137
		All	0.0081	0.0105	0.0131	0.0162	0.0110
	Blended (accepted)		0.010	0.013	0.010	0.034	0.014
	Blended (rejected)		0.0224	0.0200	0.0267	0.0175	0.0218
Mean for all unidentified lines (D_b)			0.0101	0.0113	0.0137	0.0177	0.0120
Probability of accidental coincidence	Identified lines		0.39	0.25	0.22	0.14	0.258
	Unidentified lines		0.09	0.12	0.09	0.07	0.094
	No coincidence		0.52	0.63	0.69	0.79	0.648

TABLE 22

PREDICTED AND OBSERVED COINCIDENCES

λ	Available Lines N	Identified Lines			Unidentified Lines			No Coincidence		
		Pred	Obs	O−P	Pred	Obs	O−P	Pred	Obs	O−P
2975–4000	832	324	412	+ 88	75	253	+178	433	167	−266
4000–5000	800	200	240	+ 40	96	320	+224	504	240	−264
5000–6000	672	148	140	− 8	60	254	+194	464	278	−186
6000–6600	239	34	38	+ 4	17	59	+ 42	188	142	− 46
Sums	2543	706	830	+124	248	886	+638	1589	827	−762
2975–6600	2543	656	830	+174	239	886	+647	1648	827	−821

TABLE 23

NUMBERS OF PHYSICALLY SIGNIFICANT COINCIDENCES

λ	With Unidentified Lines					With Identified Lines				
	N	N'	G+F	Astrophysical	Statistical	N	N'	G+F	Astrophysical	Statistical
2975–4000	266	211	220	177	178	77	68	62	55	88
4000–5000	370	292	308	243	224	44	44	37	37	40
5000–6000	305	245	260	209	194	27	26	20	19	−8
6000–6600	64	55	54	47	42	19	19	0	0	4
Sums				676	638				111	124

The probable numbers of such real lines are given in the columns headed O−P. It is of much interest to compare these with the numbers of lines which had already been classified as good or fair, upon astrophysical grounds quite independent of the statistical study. In doing this, the recorded numbers of these lines should be diminished in the ratio which the number N' of coincidences in each group available for the statistical study bears to the whole number N of such coincidences (since it is unfair to impose any special characteristic upon the N−N' lines which were used to pick out the multiplets). The results are shown in table 23.

The numbers of physically real coincidences derived astrophysically are $(G + F)N'/N$, while the statistical estimates are $O − P$ of table 22. The agreement of the two columns is remarkable.

It is clear that the identifications of predicted iron lines in the sun which have been classified as good or fair are physically significant. The list doubtless includes some accidental coincidences and omits about as many real ones, but should be generally trustworthy. The excess of observed coincidences with otherwise identified lines, shown in table 22, is substantially accounted for by those which showed recognizable evidence of blending.

The whole number of physically real predictions (by the statistical test), according to this table, is 762. The actual number of predicted iron lines in the solar spectrum must be considerably greater. To begin with, the 212 predicted lines excluded from the statistical study should include about the same proportion

which are physically real as the 960 which were available, that is, about 170. Also, the proportion of physically real coincidences should be the same for the 706 predicted lines which coincide by accident with lines of other elements as for the other 1837. The latter give 762 coincidences; there must be about 290 among the former. If there were no masking, there should be some 1200 lines of iron which, though not yet produced in the laboratory, should be observable in the solar spectrum between λ2975 and λ6600, while nearly 1600 lines in the same multiplets are too faint to appear.

The proportion of lines present decreases toward the red, where the multiplets arise from higher energy levels, and average fainter. Despite this, many more predicted iron lines should be found in the sun when the study of its spectrum from λ6600 to λ12000 has been completed.

(23) TABLE OF PREDICTED SOLAR LINES OF FE I

Table C (p. 170) contains those predicted lines of Fe I for which the evidence of presence in the solar spectrum was adjudged to be good or fair, 1254 in all. Those in the range from 6600–2975A have just been discussed. Those of longer wave-length are taken from the "Monograph on the Red and Infra-Red Solar Spectrum," which is under preparation at Mount Wilson by H. D. Babcock and others. The identifications have been made in the manner described above, by one of the writers. The writers greatly appreciate the use of this material. The wave-lengths

TABLE 24

PRESENCE IN THE SUN OF IRON LINES OBSERVED
IN THE LABORATORY

λ	2975–4000	4000–5000	5000–6000	6000–6600	All
Classified Lines					
Unblended	928	593	357	107	1985
Blended	243	95	39	15	392
Masked	25	11	10	3	49
Absent	10	6	20	13	49
Total	1206	705	426	138	2475
Unclassified Lines					
Unblended	138	69	34	11	252
Blended	67	12	10	3	92
Masked	2	1	2	2	7
Absent	39	30	104	57	230
Total	246	112	150	73	581

and intensities are from this monograph or the Revised Rowland but include some changes in Rowland's intensities.[32] The third column gives the grade g or f assigned as above. A "b" added denotes that the line is blended in the solar spectrum.

The limitations of this table should be borne in mind. First, many lines (probably almost 300 between 6600–2975A) have perforce been omitted, owing to masking in the sun. Second, some accidental coincidences are doubtless present, and some real iron lines omitted, among those graded poor and rather drastically excluded. The great majority of the tabular lines must, however, be real.

(24) OBSERVED LINES OF IRON IN THE SUN

For comparison, the solar behavior of those iron lines which have been observed in the laboratory is listed in table 24. The lines which have and have not been classified in the present analysis are listed separately.

Only 2 per cent of the former fail to appear in the sun, but 40 per cent of the latter. The unclassified lines are faint, and more of them might be absent, but not so many more. Most of the "absent" lines among these are probably due to impurities (§ 16). Most of the classified lines of Fe I which do not appear in the sun are recorded as very faint in the laboratory. Four of them (at λλ2980.532, 2981.446, 2994.50 and 3020.643) are strong lines. A letter from H. D. Babcock states that all are present in the sun with about the anticipated strength.

The remaining 47 lines of wave-length less than 6600A (two of which are blended pairs) were graded on the same system as the predicted lines. Three were graded "good," 11 "fair," and 33 "poor." For many of the last, the discrepancies in wave-length

[32] C. E. Moore, *Atomic Lines in the Sun-Spot Spectrum.* Princeton, 1933.

are large, and it is doubtful whether they really belong in the classified places, nor is it certain whether they are due to iron at all. Indeed, if a line attributed to iron in the laboratory is absent from the sun, this is strong presumptive evidence that it is not really due to the metal.

(25) DESIRABILITY OF FUTURE OBSERVATIONS

It is evident that the spectrum of the iron arc is very far from being fully observed. If a laboratory source could be discovered which was as efficient in producing it as is the absorption in the sun's atmosphere, at least 1500 lines would probably be added to the list. This estimate takes account only of transitions among terms already known, and would be increased by allowance for unknown high-lying levels. No such progress is likely to be made by repeating observations with familiar sources such as the arc in air. The advantage of the solar atmosphere probably consists in the great depth of highly rarefied gas. This can only be feebly imitated in the laboratory, but experiments would be attractive.

Once the source was found, observations with pure material in the usual region (say from λ2100 to λ11000) would be easy, and measurement by known apparatus rapid. The "vacuum region" has only been reconnoitered, and must contain much of interest. The infra-red, beyond the limit of photography, appears never to have been so much as examined with modern equipment of good resolving power. Observations might lead to the identification of many new levels, and lines predicted from known levels should provide abundant standards. Much could be done here with existing sources.

All told, it is evident that a great deal of work will still be required before this "familiar" spectrum is really thoroughly known, and that it still offers attractive and remunerative problems to the observer.

(26) THE TABLES OF CLASSIFIED LINES

The long tables of classified lines of Fe I already mentioned in the text (pp. 115 and 131) conclude Part I of this paper. Table B contains all classified lines of this spectrum that have been observed in the laboratory, 3606 in all. In some cases, where the laboratory line is measured only to 0.1A, the solar wave-length is entered in the table. For such lines there is good agreement between the solar and predicted wave-lengths, and it seems reasonable to assume that the line observed in the laboratory is the one to which the assigned designation applies. Consequently, the laboratory intensity is entered instead of the solar intensity. When these poorly measured lines are absent or masked in the sun, the wave-lengths are given to 0.1A and referred to the proper source.

The letters in column 1 refer to the various sources from which the laboratory wave-length (column 2) is

taken. At the end of the table a complete bibliography is given with the various letters.

The selection of the best source to use for each wave-length has not been an easy task. For the many accurately measured lines, it is difficult to select the most accurate value. Those adopted for international standards have been the first choice throughout. For less accurate measures, the sources which have appeared to be consistently satisfactory for use in many multiplets have dominated the selection. The experience gained from studying the literature for the selection of wave-lengths for all elements included in the "Revised Multiplet Table" has been the guide throughout this work. All wave-lengths have been selected by one of the writers (C. E. M.). While there is no doubt that a more homogeneous list is highly desirable, yet it is hoped that the present table will suffice for those interested in using it (compare § 3).

The intensity and temperature class are in the next two columns. These have already been described in §§ 4 and 5. Then follow the wave-number, which corresponds to the observed wave-length in column 2, and the difference between the observed wave-number and that calculated from the term values of table A. The unit of o−c is 0.01 cm^{-1}, but only one digit is given if the line has been measured only to 0.1A, as described above. Finally, the last column contains the multiplet designation, which is self-explanatory.

The symbols used in table B are described at the end of the table. An asterisk denotes that the line is a blend, i. e. that the lines designated probably all contribute sensibly to the observed intensity. For a line which is probably of observable intensity but is masked by a stronger neighbor, the designation is given in parentheses. Lines blended with Fe II are marked "§." Other special notes, made by A. S. King in the course of his work on temperature classification, are indicated by a double asterisk.

Table C contains 1254 predicted lines of Fe I that have been accepted as present in the solar spectrum and graded "good" or "fair" (see § 23). It is arranged similarly to table B, except that the solar spectrum is the source used for all wave-lengths and intensities. If the solar line is a blend, a "b" follows the grade "g" or "f" in the third column.

TABLE A
TERMS OF FE I

Config	Desig	Term	Diff	Source	g	Config	Desig	Term	Diff	Source	g
$3d^7(a^2P)4s$	a^1P_1	27543.00		10	0.817	$3d^7(a^4F)4d$	f^3F_4	54683.39	441.58	7	1.141
							f^3F_3	55124.974	253.868	7	1.071
$3d^7(a^2D)4s$	a^1D_2	28604.61		10	1.028		f^3F_2	55378.842		7	0.676
$3d^6 4s^2$	b^1D_2	34636.82		11							
$3d^7(b^2F)4s$	a^1F_3	40534.18:		11		$3d^7(a^2G)4s$	a^3G_5	21715.770	283.397	6	1.197
							a^3G_4	21999.167	250.294	6	1.051
$3d^7(a^2G)4s$	a^1G_4	24574.690		7	1.001		a^3G_3	22249.461		6	0.756
$3d^6 4s^2$	b^1G_4	29798.96		11	0.979	$3d^6 4s^2$	b^3G_5	23783.654	335.200	5	1.200
$3d^7(a^2H)4s$	a^1H_5	28819.98		10	1.000		b^3G_4	24118.854	219.951	5	1.048
							b^3G_3	24338.805		5	0.761
$3d^6 4s^2$	a^1I_6	29313.04		11	1.014	$3d^7(a^4F)4d$	e^3G_5	53739.488	327.08	5	1.248
							e^3G_4	54066.57	312.87	5	1.096
$3d^6 4s^2$	a^3P_2	18378.215	1174.278	5	1.506		e^3G_3	54379.44		5	0.842
	a^3P_1	19552.493	485.37	5	1.500						
	a^3P_0	20037.86		5		$3d^6 4s^2$	a^3H_6	19390.197	230.839	5	1.163
							a^3H_5	19621.036	167.244	5	1.038
$3d^7(a^4P)4s$	b^3P_2	22838.360	108.500	5	1.498		a^3H_4	19788.280		5	0.811
	b^3P_1	22946.860	104.930	5	1.489						
	b^3P_0	23051.790		5		$3d^7(a^2H)4s$	b^3H_6	26105.95	245.14	10	1.165
$3d^7(a^2P)4s$	c^3P_2	24335.804	436.256	7	1.484		b^3H_5	26351.09	276.55	10	1.032
	c^3P_1	24772.060	319.56	7	1.466		b^3H_4	26627.64		10	0.811
	c^3P_0	25091.62		10		$3d^7(a^4F)4d$	e^3H_6	53840.68:	426.08	10	1.225
$3d^7(a^4F)4d$	e^3P_2	54879.720	496.397	7	1.459		e^3H_5	54266.76:	288.69	10	1.109
	e^3P_1	55376.117	350.42	7	1.459		e^3H_4	54555.45:		8	0.871
	e^3P_0	55726.54:		10		$3d^6 4s(a^6D)4d$	e^5S_2	51148.892		7	1.952
$3d^7(a^2D)4s$	a^3D_3	26225.03	398.70	10	1.335	$3d^7(a^4P)4s$	a^5P_3	17550.210	176.797	1	1.666
	a^3D_2	26623.73	-217.24	10	1.178		a^5P_2	17727.017	200.394	1	1.820
	a^3D_1	26406.49		10	0.731		a^5P_1	17927.411		1	2.499
$3d^6 4s^2$	b^3D_3	29371.86	-15 08	10	1.326	$3d^6 4s(a^6D)4d$	e^5P_3	51837.279	230.17	7	1.664
	b^3D_2	29356.78	-36.73	10			e^5P_2	52067.45	-47.74	11	
	b^3D_1	29320.05		11			e^5P_1	52019.706		7	2.432
$3d^6 4s(a^4D)5s$	e^3D_3	51294.262	445.702	5	1.345	$3d^7(a^4F)4d$	f^5P_3	53160.53	408.19	8	
	e^3D_2	51739.964	299.975	5	1.125		f^5P_2	53568.72	356.54	7	
	e^3D_1	52039.939		5	0.801		f^5P_1	53925.26		8	
$3d^7(a^4F)4d$	f^3D_3	53747.547	319.274	4	1.258	$3d^6 4s^2$	a^5D_4	0.000	415.933	1	1.490
	f^3D_2	54066.821	382.51	4			a^5D_3	415.933	288.070	1	1.497
	f^3D_1	54449.33		4			a^5D_2	704.003	184.129	1	1.494
$3d^7(a^4F)4s$	a^3F_4	11976.260	584.693	1	1.254		a^5D_1	888.132	89.942	1	1.498
	a^3F_3	12560.953	407.620	1	1.086		a^5D_0	978.074		1	
	a^3F_2	12968.573		1	0.670	$3d^6 4s(a^6D)5s$	c^5D_4	44677.010	384.324	1	1.502
$3d^6 4s^2$	b^3F_4	20641.144	233.377	5	1.235		e^5D_3	45061.334	272.546	1	1.508
	b^3F_3	20874.521	164.500	5	1.073		e^5D_2	45333.880	175.275	1	1.503
	b^3F_2	21039.021		5	0.663		e^5D_1	45509.155	85.929	1	1.518
$3d^8$	c^3F_4	32873.68	539.10	11	1.264		e^5D_0	45595.084		1	
	c^3F_3	33412.78	352.55	11	1.066	$3d^6 4s(a^6D)4d$	f^5D_4	50423.185	111.250	7	1.514
	c^3F_2	33765.33		11	0.677		f^5D_3	50534.435	164.231	7	1.615
$3d^7(b^2F)4s$	d^3F_4	37046.00	-70.36	11			f^5D_2	50698.666	181.486	7	1.614
	d^3F_3	36975.64	-35.04	11			f^5D_1	50880.152	100.87	7	1.662
	d^3F_2	36940.60		11			f^5D_0	50981.02		8	
$3d^7(a^4F)5s$	e^3F_4	47960.973	570.923	4	1.288	$3d^6 4s(a^4D)5s$	g^5D_4	51350.505	420.072	3	1.487
	e^3F_3	48531.896	396.527	4	1.107		g^5D_3	51770.577	279.24	3	1.492
	e^3F_2	48928.423		4	0.622		g^5D_2	52049.82	164.51	3	1.57:
							g^5D_1	52214.33	43.00	3	
							g^5D_0	52257.33		3	

TABLE A—(*Continued*)

Config	Desig	Term	Diff	Source	g
3d⁷(a⁴F)4d	h⁵D₄	53155.13		7	1.435
	h⁵D₃	53545.882	390.75	7	
	h⁵D₂	53966.720	420.838	7	
	h⁵D₁	54132.48	165.76	10	
	h⁵D₀				
3d⁶4s(a⁴D)4d	i⁵D₄	57697.59		11	1.384
	i⁵D₃	57813.97	116.38	11	1.415
	i⁵D₂	57974.16	160.19	11	
	i⁵D₁				
	i⁵D₀				
3d⁷(a⁴F)4s	a⁵F₅	6928.280		1	1.404
	a⁵F₄	7376.775	448.495	1	1.349
	a⁵F₃	7728.071	351.296	1	1.248
	a⁵F₂	7985.795	257.724	1	0.995
	a⁵F₁	8154.725	168.930	1	-0.014
3d⁷(a⁴F)5s	e⁵F₅	47005.510		2	1.421
	e⁵F₄	47377.967	372.457	1	1.331
	e⁵F₃	47755.538	377.571	1	1.236
	e⁵F₂	48036.667	281.129	1	0.991
	e⁵F₁	48221.323	184.656	1	0.007
3d⁶4s(a⁶D)4d	f⁵F₅	51103.237		7	1.384
	f⁵F₄	51461.707	358.470	7	1.355:
	f⁵F₃	51604.146	142.439	7	
	f⁵F₂	51705.052	100.906	7	0.967
	f⁵F₁	51754.534	49.482	7	
3d⁷(a⁴F)4d	g⁵F₅	53061.28		7	
	g⁵F₄	53393.715	332.44	7	
	g⁵F₃	53830.96	437.24	7	
	g⁵F₂	54257.52	426.56	7	
	g⁵F₁	54386.16	128.64	8	
3d⁶4s(a⁶D)4d	e⁵G₆	50522.94		7	1.351
	e⁵G₅	50703.912	180.97	7	1.360
	e⁵G₄	50979.627	275.715	7	1.238
	e⁵G₃	51219.059	239.432	7	1.294
	e⁵G₂	51370.184	151.125	7	0.953
3d⁷(a⁴F)4d	f⁵G₆	53169.21		7	1.323
	f⁵G₅	53281.735	112.53	7	1.221
	f⁵G₄	53769.020	487.285	7	
	f⁵G₃	54161.182	392.162	7	1.142
	f⁵G₂	54375.719	214.537	7	
3d⁶4s(a⁴D)4d	g⁵G₆	58001.88		11	1.40:
	g⁵G₅	58271.50:	269.62	11	
	g⁵G₄	58520.18:	248.68	11	
	g⁵G₃	58710.09:	189.91	11	
	g⁵G₂	58824.81	114.72	11	0.343
3d⁷(a⁴F)4d	e⁵H₇	53275.20:		8	1.30:
	e⁵H₆	53353.02:	77.82	10	1.191
	e⁵H₅	53874.30:	521.28	10	1.102
	e⁵H₄	54237.20	362.90	10	0.90:
	e⁵H₃	54491.08	253.88	10	0.484
3d⁶4s(a⁶D)4d	e⁷S₃	51570.16		7	1.92:
3d⁶4s(a⁶D)4d	e⁷P₄	50475.32		7	1.585
	e⁷P₃	50611.303	135.98	7	1.687
	e⁷P₂	50861.32	250.02	7	

Config	Desig	Term	Diff	Source	g
3d⁶4s(a⁶D)5s	e⁷D₅	42815.855		2	1.585
	e⁷D₄	43163.327	347.472	2	1.655
	e⁷D₃	43434.633	271.306	2	1.755
	e⁷D₂	43633.535	198.902	2	2.009
	e⁷D₁	43763.982	130.447	2	3.002
3d⁶4s(a⁶D)4d	f⁷D₅	50377.92		7	1.510
	f⁷D₄	50808.053	430.13	7	1.574
	f⁷D₃	50861.85	53.80	8	
	f⁷D₂	50998.686	136.84	7	1.844
	f⁷D₁	51048.10	49.41	7	
3d⁶4s(a⁶D)6s	g⁷D₅	53800.90		11	1.586
	g⁷D₄	54124.62	323.72	11	1.65:
	g⁷D₃	54413.74:	289.12	11	
	g⁷D₂	54611.72	197.98	11	
	g⁷D₁	54747.74:	136.02	11	
3d⁶4s(a⁶D)7s	h⁷D₅	57897.17		11	
3d⁶4s(a⁶D)4d	e⁷F₆	50342.180		7	1.490
	e⁷F₅	50833.485	491.305	7	1.505
	e⁷F₄	51192.320	358.835	7	1.617
	e⁷F₃	51148.87	- 43.45	7	1.499
	e⁷F₂	51331.090	182.22	7	
	e⁷F₁	51208.04	-123.05	7	2.490
	e⁷F₀				
3d⁶4s(a⁶D)4d	e⁷G₇	50651.76:		8	
	e⁷G₆	50967.873	316.11	7	1.415
	e⁷G₅	51228.595	260.722	7	1.379
	e⁷G₄	51334.94	106.34	7	1.338
	e⁷G₃	51460.53	125.59	7	1.244
	e⁷G₂	51539.77	79.24	7	
	e⁷G₁	51566.86	27.09	10	-0.374
	X₃	40871.46		11	
	X₂	41178.36	306.90	11	
	1₅	56428.06		11	
	2₄,₅	56452.04		11	
	3₄	56842.70		11	
	4₂	58213.17		11	
3d⁷(a²P)4p	z¹P₁°	53229.94		10	1.266
	z¹D₂°	49477.10		10	0.92:
3d⁷(a²P)4p	y¹D₂°	51708.33		10	1.025
	x¹D₂°	51762.12		11	0.883
3d⁷(a²D)4p:	w¹D₂°	55754.29		11	0.990
3d⁷(a²G)4p:	z¹F₃°	50586.89		8	1.018
	y¹F₃°	53661.13		11	1.21:
	x¹F₃°	53763.28		10	1.079
	w¹F₃°	55790.72		11	0.908
3d⁷(a²G)4p:	z¹G₄°	47452.770		8	1.025
3d⁷(a²H)4p:	y¹G₄°	48702.57		7	1.063
	x¹G₄°	50614.02		10	0.978
	w¹G₄°	54810.82		11	1.001
	v¹G₄°	56951.27		11	1.053

TABLE A—(*Continued*)

Config	Desig	Term	Diff	Source	g	Config	Desig	Term	Diff	Source	g
$3d^7(a^2G)4p$	$z^1H_5^\circ$	48382.63		10	1.018	$3d^7(a^4F)4p$	$y^3F_4^\circ$	36686.204	476.566	1	1.246
$3d^7(a^2H)4p$	$y^1H_5^\circ$	53722.44		10	1.03:		$y^3F_3^\circ$	37162.770	358.416	1	1.086
	$x^1H_5^\circ$	55525.58		11	1.018		$y^3F_2^\circ$	37521.186		1	0.688
$3d^7(a^2H)4p$	$z^1I_6^\circ$	53093.60		10	1.010	$3d^7(a^2G)4p$	$x^3F_4^\circ$	46889.207	203.569	7	1.344
							$x^3F_3^\circ$	47092.776	104.298	2	1.159
$3d^6 4s(b^2P)4p$	$z^3S_1^\circ$	46600.884		7	1.888		$x^3F_2^\circ$	47197.074		2	0.743
$3d^7(a^4P)4p$	$y^3S_1^\circ$	47555.63		5	1.884	$3d^6 4s(b^4F)4p$	$w^3F_4^\circ$	49108.94	134.01	7	1.181
$3d^6 4s(a^1D)4p$	$z^3P_2^\circ$	33946.965	415.925	1	1.493		$w^3F_3^\circ$	49242.950	190.23	7	1.165
	$z^3P_1^\circ$	34362.890	192.75	2	1.496		$w^3F_2^\circ$	49433.18		10	0.677
	$z^3P_0^\circ$	34555.64		2		$3d^6 4s(a^4G)4p$:	$v^3F_4^\circ$	51304.65	60.65	10	1.122
$3d^7(a^4P)4p$	$y^3P_2^\circ$	46727.137	174.755	5	1.444		$v^3F_3^\circ$	51365.30	−163.97	10	1.096
	$y^3P_1^\circ$	46901.892	−229.32	5	1.600		$v^3F_2^\circ$	51201.33		11	0.803
	$y^3P_0^\circ$	46672.57		10		$3d^7(a^2D)4p$:	$u^3F_4^\circ$	56592.76	190.57	10	1.148
$3d^6 4s(b^4P)4p$	$x^3P_2^\circ$	48304.707	211.44	7	1.263		$u^3F_3^\circ$	56783.33	75.32	10	1.077
	$x^3P_1^\circ$	48516.15	−56.03	7	1.547		$u^3F_2^\circ$	56858.65		10	0.687
	$x^3P_0^\circ$	48460.12		10			$t^3F_4^\circ$	57550.09	90.97	11	1.235
$3d^7(a^2D)4p$:	$w^3P_2^\circ$	50186.87	−143.62	7	1.469		$t^3F_3^\circ$	57641.06	67.70	11	
	$w^3P_1^\circ$	50043.25	−91.89	10	1.389		$t^3F_2^\circ$	57708.76		11	0.698
	$w^3P_0^\circ$	49951.36		10		$3d^7(a^4F)4p$	$z^3G_5^\circ$	35379.237	388.354	1	1.248
$3d^7(a^2P)4p$:	$v^3P_2^\circ$	52916.33	892.04	10	1.495		$z^3G_4^\circ$	35767.591	311.804	1	1.100
	$v^3P_1^\circ$	53808.37		11	1.418		$z^3G_3^\circ$	36079.395		1	0.791
	$v^3P_0^\circ$					$3d^6 4s(a^4H)4p$	$y^3G_5^\circ$	45294.86	133.60	5	1.207
$3d^6 4s(a^4D)4p$	$z^3D_3^\circ$	31322.639	363.738	2	1.321		$y^3G_4^\circ$	45428.456	134.570	5	1.053
	$z^3D_2^\circ$	31686.377	250.973	2	1.168		$y^3G_3^\circ$	45563.026		5	0.765
	$z^3D_1^\circ$	31937.350		2	0.513	$3d^6 4s(b^4F)4p$	$x^3G_5^\circ$	47834.622	−22.44	7	1.203
$3d^7(a^4F)4p$	$y^3D_3^\circ$	38175.382	502.685	1	1.324		$x^3G_4^\circ$	47812.18	22.08	7	1.061
	$y^3D_2^\circ$	38678.067	317.697	1	1.151		$x^3G_3^\circ$	47834.26		10	0.668
	$y^3D_1^\circ$	38995.764		1	0.493		$w^3G_5^\circ$	48231.33	130.59	7	1.27:
$3d^6 4s(b^4P)4p$	$x^3D_3^\circ$	45220.738	61.151	7	1.352		$w^3G_4^\circ$	48361.92	113.82	7	0.934
	$x^3D_2^\circ$	45281.889	269.944	7	1.200		$w^3G_3^\circ$	48475.74		7	0.584
	$x^3D_1^\circ$	45551.833		8	0.556	$3d^7(a^2G)4p$	$v^3G_5^\circ$	49460.92	167.00	7	1.163
$3d^7(a^4P)4p$	$w^3D_3^\circ$	47017.239	118.903	5	1.346		$v^3G_4^\circ$	49627.92	222.69	7	0.914
	$w^3D_2^\circ$	47136.142	135.953	5	1.216		$v^3G_3^\circ$	49850.61		7	0.763
	$w^3D_1^\circ$	47272.095		2	0.767	$3d^7(a^2H)4p$	$u^3G_5^\circ$	51373.96	294.26	10	1.140
$3d^6 4s(b^4F)4p$	$v^3D_3^\circ$	49135.08	107.60	7	1.211		$u^3G_4^\circ$	51668.22	157.58	10	1.067
	$v^3D_2^\circ$	49242.68	54.98	8	0.954		$u^3G_2^\circ$	51825.80		10	0.801
	$v^3D_1^\circ$	49297.66		7	0.562	$3d^6 4s(a^4G)4p$:	$t^3G_5^\circ$	53983.30	254.16	8	1.234
$3d^7(a^2P)4p$	$u^3D_3^\circ$	51969.14	327.82	10	1.306		$t^3G_4^\circ$	54237.46	362.89	8	1.183
	$u^3D_2^\circ$	52296.96	215.50	10	1.156		$t^3G_3^\circ$	54600.35		10	0.922
	$u^3D_1^\circ$	52512.46		7	0.700		$s^3G_5^\circ$	55907.22	−1.66	8	1.145
$3d^7(a^2D)4p$:	$t^3D_3^\circ$	52213.29	469.64	10	1.317		$s^3G_4^\circ$	55905.56	192.29	10	
	$t^3D_2^\circ$	52682.93	−502.11	10	1.145		$s^3G_3^\circ$	56097.85		10	0.857
	$t^3D_1^\circ$?	52180.82		10	0.801		$r^3G_5^\circ$	59926.62:	245.44	10	1.190
	$s^3D_3^\circ$	52953.68:	321.59	11	1.231		$r^3G_4^\circ$	60172.06	192.70	10	1.030
	$s^3D_2^\circ$	53275.27		11			$r^3G_2^\circ$	60364.76:		10	0.780
	$s^3D_1^\circ$						$q^3G_5^\circ$	60677.23:	77.48	10	
$3d^6 4s(a^4D)4p$	$z^3F_4^\circ$	31307.272	497.825	1	1.250		$q^3G_4^\circ$	60754.71:	52.01	10	
	$z^3F_3^\circ$	31805.097	328.917	1	1.086		$q^3G_3^\circ$	60806.72		10	
	$z^3F_2^\circ$	32134.014		1	0.682						

TABLE A—(Continued)

Config	Desig	Term	Diff	Source	g	Config	Desig	Term	Diff	Source	g
3d⁶4s(a⁴H)4p	z³H₆°	46982.383	26.045	7	1.200	3d⁶4s(a⁶D)5p	u⁵P₃°	51691.98:	253.33	9	
	z³H₅°	47008.428	98.116	7	1.060		u⁵P₂°	51945.31:	165.0	9	
	z³H₄°	47106.544		7	0.880		u⁵P₁°	52110.3:		9	2.633
3d⁷(a³G)4p	y³H₆°	49434.20	170.25	7	1.17:	3d⁶4s(b⁴D)4p	t⁵P₃°	53388.68:	723.62	9	
	y³H₅°	49604.45	122.61	7	1.075		t⁵P₂°	54112.30	158.81	9	1.70:
	y³H₄°	49727.058		7	0.929		t⁵P₁°	54271.11		9	
3d⁶4s(a⁴G)4p:	x³H₆°	51023.19	45.58	10	1.161	3d⁶4s(a⁶D)4p	z⁵D₄°	25900.002	240.191	1	1.502
	x³H₅°	51068.77		8	1.038		z⁵D₃°	26140.193	199.515	1	1.500
	x³H₄°						z⁵D₂°	26339.708	139.685	1	1.503
3d⁷(a²H)4p	w³H₆°	52431.47	181.61	10	1.177		z⁵D₁°	26479.393	71.102	1	1.495
	w³H₅°	52613.08	155.70	10	1.033		z⁵D₀°	26550.495		1	
	w³H₄°	52768.78		10	0.810	3d⁷(a⁴F)4p	y⁵D₄°	33095.962	411.182	1	1.496
	v³H₆°	55489.81	− 59.92	10	1.169		y⁵D₃°	33507.144	294.451	1	1.492
	v³H₅°	55429.89	16.17	10	1.057		y⁵D₂°	33801.595	215.532	1	1.495
	v³H₄°	55446.06		10	0.804		y⁵D₁°	34017.127	104.496	1	1.492
3d⁶4s(b²H)4p:	u³H₆°	56334.01	48.68	10	1.166		y⁵D₀°	34121.623		1	
	u³H₅°	56382.69	40.64	10	1.029	3d⁶4s(a⁴D)4p	x⁵D₄°	39625.829	344.051	1	1.489
	u³H₄°	56423.33		10	0.859		x⁵D₃°	39969.880	261.485	1	1.504
	t³H₆°	60365.70:	183.48	10	1.163		x⁵D₂°	40231.365	173.179	1	1.501
	t³H₅°	60549.18	208.50	10	1.040		x⁵D₁°	40404.544	86.768	1	1.498
	t³H₄°	60757.68		10	0.805		x⁵D₀°	40491.312		1	
3d⁶4s(a⁴H)4p	z³I₇°	45978.04:	48.94	10	1.149	3d⁶4s(b⁴P)4p	w⁵D₄°	43499.54	423.16	1	1.492
	z³I₆°	46026.98	108.94	10	1.040		w⁵D₃°	43922.70	260.94	1	1.481
	z³I₅°	46135.92		10	0.833		w⁵D₂°	44183.64	227.54	1	1.533
3d⁷(a²H)4p	y³I₇°	52655.04:	−141.45	10	1.147		w⁵D₁°	44411.18	47.78	10	1.315
	y³I₆°	52513.59	385.47	10	1.019		w⁵D₀°	44458.96		10	
	y³I₅°	52899.06		10	0.830	3d⁶4s(b⁴F)4p	v⁵D₄°	44415.13	136.31	7	1.401
3d⁶4s(b²H)4p	x³I₇°	57027.56:	42.69	10	1.145		v⁵D₃°	44551.44	112.69	7	1.386
	x³I₆°	57070.25	34.01	10	1.028		v⁵D₂°	44664.13	96.66	7	1.378
	x³I₅°	57104.26		10	0.832		v⁵D₁°	44760.79	66.13	7	1.389
3d⁶4s(b⁴P)4p	z⁵S₂°	40895.022		2	1.985		v⁵D₀°	44826.92		11	
3d⁷(a⁴P)4p	y⁵S₂°	44511.86		7	1.888	3d⁷(a⁴P)4p	u⁵D₄°	46720.85	24.18	7	1.341
							u⁵D₃°	46745.03	143.55	7	1.397
3d⁶4s(a⁶D)4p	z⁵P₃°	29056.341	412.692	1	1.657		u⁵D₂°	46888.582	288.67	7	1.260
	z⁵P₂°	29469.033	263.716	1	1.835		u⁵D₁°	47177.25	− 5.73	10	1.410
	z⁵P₁°	29732.749		1	2.487		u⁵D₀°	47171.52:		7	
3d⁶4s(a⁴D)4p	y⁵P₃°	36766.998	390.596	1	1.661	3d⁶4s(a⁶D)5p	t⁵D₄°	51076.68	284.78	9	1.486
	y⁵P₂°	37157.594	251.981	1	1.836		t⁵D₃°	51361.46	268.61	9	
	y⁵P₁°	37409.575		1	2.502		t⁵D₂°	51630.07:	206.80	9	
3d⁶4s(b⁴P)4p	x⁵P₃°	42532.76	327.07	2	1.650		t⁵D₁°	51836.87:	104.89	9	
	x⁵P₂°	42859.829	219.22	2	1.822		t⁵D₀°	51941.76:		9	
	x⁵P₁°	43079.05		2	2.464	3d⁶4s(a⁶D)4p	z⁵F₅°	26874.562	292.275	1	1.399
3d⁵4s²(a⁶S)4p	w⁵P₃°	46137.14	176.47	5	1.658		z⁵F₄°	27166.837	227.866	1	1.355
	w⁵P₂°	46313.61	96.83	5	1.822		z⁵F₃°	27394.703	164.895	1	1.250
	w⁵P₁°	46410.44		5	2.436		z⁵F₂°	27559.598	106.764	1	1.004
3d⁷(a⁴P)4p	v⁵P₃°	47966.63	196.86	2	1.646		z⁵F₁°	27666.362		1	−0.012
	v⁵P₂°	48163.49	126.40	2	1.740	3d⁷(a⁴F)4p	y⁵F₅°	33695.418	344.122	1	1.417
	v⁵P₁°	48289.89		2	2.213		y⁵F₄°	34039.540	289.235	1	1.344
							y⁵F₃°	34328.775	218.460	1	1.244
							y⁵F₂°	34547.235	144.937	1	0.998
							y⁵F₁°	34692.172		1	−0.016
						3d⁶4s(a⁴D)4p	x⁵F₅°	40257.367	337.10	2	1.390
							x⁵F₄°	40594.47	247.66	1	1.328
							x⁵F₃°	40842.13	165.93	1	1.254
							x⁵F₂°	41018.06	112.56	1	0.998
							x⁵F₁°	41130.62		1	−0.006

TABLE A—(Continued)

Config	Desig	Term	Diff	Source	g
3d⁶4s(b⁴F)4p	w⁵F₅°	44243.67	−221.12	7	1.382
	w⁵F₄°	44022.55	143.69	7	1.444
	w⁵F₃°	44166.24	119.24	7	1.351
	w⁵F₂°	44285.48	92.94	1	1.117
	w⁵F₁°	44378.42:		10	0.283
3d⁶4s(a⁴G)4p	v⁵F₅°	47606.10		10	1.317
	v⁵F₄°	47930.04	323.94	8	1.264
	v⁵F₃°	48122.97	192.93	10	1.236
	v⁵F₂°	48238.903	115.93	8	1.267
	v⁵F₁°	48350.62	111.72	9	0.230
3d⁶4s(a⁶D)5p	u⁵F₅°	51016.72:		9	
	u⁵F₄°	51381.48	364.76	9	
	u⁵F₃°	51619.14:	237.66	9	
	u⁵F₂°	51827.59:	208.45	9	
	u⁵F₁°	51945.86:	118.27	9	
3d⁷(a⁴F)4p	z⁵G₆°	34843.980	−61.532	2	1.332
	z⁵G₅°	34782.448	474.897	1	1.218
	z⁵G₄°	35257.345	354.304	1	1.103
	z⁵G₃°	35611.649	244.775	1	0.887
	z⁵G₂°	35856.424		1	0.335
3d⁶4s(a⁴H)4p	y⁵G₆°	42784.387		4	1.342
	y⁵G₅°	42911.918	127.531	1	1.203
	y⁵G₄°	43022.998	111.080	2	1.024
	y⁵G₃°	43137.511	114.513	2	0.905
	y⁵G₂°	43210.044	72.533	2	0.331
3d⁶4s(b⁴F)4p	x⁵G₆°	45608.35:		5	1.336
	x⁵G₅°	45726.18	117.83	5	1.269
	x⁵G₄°	45833.24	107.06	5	1.158
	x⁵G₃°	45913.53	80.29	5	0.928
	x⁵G₂°	45964.98	51.45	5	0.323
3d⁶4s(a⁴G)4p	w⁵G₆°	47363.39		10	1.306
	w⁵G₅°	47420.23	56.84	10	1.305
	w⁵G₄°	47590.07	169.84	10	1.145
	w⁵G₃°	47693.289	103.22	8	0.931
	w⁵G₂°	47831.20	137.91	11	0.472

Config	Desig	Term	Diff	Source	g
3d⁶4s(a⁴H)4p	z⁵H₇°	43321.12:		10	
	z⁵H₆°	42991.66	−329.46	8	1.054
	z⁵H₅°	43108.944	117.28	7	0.871
	z⁵H₄°	43325.98	217.04	10	0.509
	z⁵H₃°				
3d⁶4s(a⁶D)4p	z⁷P₄°	23711.467	469.409	2	1.747
	z⁷P₃°	24180.876	326.052	2	1.908
	z⁷P₂°	24506.928		2	2.333
3d⁶4s²(a⁶S)4p	y⁷P₄°	40421.89	−214.77	11	1.75:
	y⁷P₃°	40207.12	−155.04	11	1.908
	y⁷P₂°	40052.08		11	2.340
3d⁶4s(a⁶D)4p	z⁷D₅°	19350.894	211.563	2	1.597
	z⁷D₄°	19562.457	194.583	2	1.642
	z⁷D₃°	19757.040	155.471	1	1.746
	z⁷D₂°	19912.511	107.137	1	2.008
	z⁷D₁°	20019.648		1	2.999
3d⁶4s(a⁶D)4p	z⁷F₆°	22650.427	195.453	2	1.498
	z⁷F₅°	22845.880	150.806	2	1.498
	z⁷F₄°	22996.686	114.262	2	1.493
	z⁷F₃°	23110.948	81.560	2	1.513
	z⁷F₂°	23192.508	52.339	2	1.504
	z⁷F₁°	23244.847	25.545	2	1.549
	z⁷F₀°	23270.392		2	

Desig	Level	Source	g	
1₂°	47419.72	8	1.137	
2₂°	49052.93	11		
3₂°	49227.16	11		
4₄°	51409.18	10	0.953	
5₃°	51435.90:	11		
6₅°	51630.23	10	1.061	
7₂°	51756.16	11		
8₁°	52857.84	10	1.246	³S₁°
9₄°	53328.87	8		
10₃°	53891.54	11	1.476	⁵D₃°?
11₂°	54004.82	11		
12₅°	54013.78	10	1.356	⁵F₅°?
13₄°	54301.36	8		

NOTE.—Term values in heavy type are those recommended by the International Astronomical Union (see § 7).

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TABLE B

Classified Lines of Fe I

Ref	λ I A	Int	T C	Observed	o−c	Desig	Ref	λ I A	Int	T C	Observed	o−c	Desig
D	11973.01	8		8349.84	+05	$a^5P_3 - z^5D_4^\circ$	E	9753.129	10	V	10250.31	−05	$y^3D_2^\circ - e^3F_2$
D	11884.12	3		8412.29	−01	$a^5P_1 - z^5D_2^\circ$	F	9747.24	2		10256.50	+03	$d^3F_2 - x^3F_2^\circ$
D	11882.80	7		8413.22	+04	$a^5P_2 - z^5D_3^\circ$	E	9738.624	200	V	10265.58	+01	$x^5F_5^\circ - e^5G_6$
D	11783.28	6		8484.28	00	$b^3P_2 - z^3D_3^\circ$	F	*9699.70	6n	V	10306.77	+01 / +03	$x^5F_3^\circ - e^5S_2$ / $x^5F_3^\circ - e^7F_3$
D·	11689.98	8		8551.99	+01	$a^5P_1 - z^5D_1^\circ$	F	9693.69	1		10313.16	+13	$x^5F_2^\circ - e^7F_2$
D	11638.25	7		8590.00	+02	$a^5P_3 - z^5D_3^\circ$	F	9683.57	1		10323.94	−10	$z^5S_2^\circ - e^5G_3$
D	11607.57	12		8612.70	+01	$a^5P_2 - z^5D_2^\circ$	F	9676.42	1		10331.57	+15	$w^5D_4^\circ - g^5F_3$
D	11593.55	5		8623.13	+05	$a^5P_1 - z^5D_0^\circ$	F	9673.16	1n		10335.05	−06	$b^3H_5 - y^3F_4^\circ$
D	11439.06	15		8739.59	+07	$b^3P_1 - z^3D_2^\circ$	F	9658.94	3		10350.26	+07	$x^5F_3^\circ - e^7F_4$
D	11422.30	6·		8752.41	+03	$a^5P_3 - z^5D_1^\circ$	F	9657.30	4	V	10352.03	−09	$x^5F_2^\circ - e^5G_2$
D	11374.02	3		8789.56	+06	$a^5P_3 - z^5D_2^\circ$	E	9653.143	20	V	10356.48	−03	$y^3D_3^\circ - e^3F_3$
D	11355.97	1		8803.53	+01	$b^3D_3 - y^3D_3^\circ$	Y	9636.69	(1)		10374.17	−06	$d^3F_4 - w^5G_5^\circ$
D	11298.83	3		8848.05	+03	$b^3P_2 - z^3D_2^\circ$	F	9634.22	5	V	10376.82	−11	$x^5F_4^\circ - e^5G_3$
D	11251.09	3		8885.60	+04	$b^3P_0 - z^3D_1^\circ$	E	9626.562	30n	V	10385.08	−08	$x^5F_4^\circ - e^5G_4$
D	11149.34	2		8966.69	−05	$b^3P_2 - z^3F_3^\circ$	F	9602.07	2		10411.57	−02	$y^7P_4^\circ - e^7F_5$
D	11119.80	10		8990.51	+02	$b^3P_1 - z^3D_1^\circ$	E	9569.960	40n	V	10446.50	−04	$x^5F_5^\circ - e^5G_5$
D	11013.27	1		9077.47	00	$y^3D_2^\circ - e^5F_3$	F	9556.56	1		10461.14	−03	$a^3D_3 - y^3F_4^\circ$
D	10925.80	1		9150.14	+09	$w^5F_5^\circ - g^5F_4$	F	9550.90	2		10467.35	+05	$x^5D_2^\circ - f^5D_2$
D	10896.30	3		9174.92	+02	$c^3P_1 - z^3P_2^\circ$	F	9527.7	1		10492.8	0	$x^5F_3^\circ - e^7G_4$
D	10884.30	3		9185.03	−05	$z^3D_2^\circ - X_3$	E	9513.24	10n	V	10508.78	+01	$x^5F_4^\circ - f^5F_5$
D	10881.65	1		9187.27	+12	$b^3P_1 - z^3F_2^\circ$	F	9462.97	2	V	10564.61	+05	$x^5D_3^\circ - f^5D_3$
D	10863.60	5		9202.53	−05	$y^3D_3^\circ - e^5F_4$	F	9454.24	4n	V	10574.37	−06	$x^5F_1^\circ - f^5F_2$
D	10849.68	2		9214.34	+05	$e^7G_4 - t^3H_5^\circ?$	F	*9452.45	2	V	10576.37	+25 / −11	$x^5F_5^\circ - e^7F_5$ / $x^5D_1^\circ - f^5D_0$
D	10818.36	3		9241.02	+01	$z^3D_1^\circ - X_2$	F	9443.98	10n		10585.85	−22	$x^5F_2^\circ - f^5F_3$
D	10783.09	3		9271.24	−03	$c^3P_0 - z^3P_1^\circ$	F	9437.91	2		10592.66	−11	$y^3F_3^\circ - e^5F_3$
D	10752.99	3		9297.20	+05	$e^7G_3 - t^3H_4^\circ?$	F	9414.14	20n	V	10619.41	−17	$x^5F_3^\circ - f^5F_4$
D	10532.21	10		9492.09	+11	$z^3D_2^\circ - X_2$	F	9410.1	1n		10624.0	+ 1	$x^5F_1^\circ - f^5F_1$
D	10469.59	20	V	9548.85	+03	$z^3D_3^\circ - X_3$	F	9401.09	10n	V	10634.15	+02	$x^5F_4^\circ - e^7G_5$
D	10452.70	5		9564.29	+10	$z^3F_4^\circ - X_3$	F	9394.71	3n	V	10641.37	−05	$x^5D_3^\circ - e^7P_3$
D	10435.36	0N		9580.19	+03	$y^3D_3^\circ - c^5F_3$	F	9388.28	3n		10648.66	−13	$x^5D_2^\circ - f^5D_1$
D	10423.65	3		9590.95	+12	$c^3P_1 - z^3P_1^\circ$	F	9382.83	3n		10654.84	+11	$y^7P_3^\circ - f^7D_3$
D	10422.99	0		9591.55	+05	$a^3G_5 - z^3F_4^\circ$	E	9372.900	6	IV*	10666.13	00	$b^3F_4 - z^3F_4^\circ$
F	10395.75	8		9616.68	+05	$a^5P_3 - z^5F_4^\circ$	E	9362.370	4	IV*	10678.13	00	$a^3P_2 - z^5P_2^\circ$
SS	10353.82	(2n)		9655.63	+04	$w^5D_4^\circ - h^5D_4$	E	9359.420	3	IV*	10681.50	00	$b^3F_4 - z^3D_3^\circ$
F	10348.16	4n		9660.91	−08	$w^5D_4^\circ - f^5P_3$	E	9350.46	10	V	10691.73	−03	$y^3F_4^\circ - e^5F_4$
F	10340.77	4		9667.81	+12	$a^5P_3 - z^5F_3^\circ$	F	9343.40	3	V	10699.80	+01	$x^5F_4^\circ - e^3D_3$
F	10218.36	3		9783.63	+05	$c^3P_1 - z^3P_0^\circ$	F	9333.94	2		10710.65	+14	$x^5F_5^\circ - e^7G_6$
E	10216.351	100	V	9785.55	−04	$y^3D_3^\circ - e^3F_4$	O	9324.07	(1)		10721.99	+09	$x^5F_2^\circ - e^3D_2$
F	10195.11	2		9805.94	+01	$a^3G_4 - z^3F_3^\circ$	F	9318.13	3	V	10728.82	+03	$x^5D_3^\circ - f^5D_2$
F	10167.4	1		9832.64	+06	$a^5P_3 - z^5F_2^\circ$	F	9307.94	2		10740.57	+10	$x^5F_4^\circ - e^7G_4$
E	10145.601	80	V	9853.79	−04	$y^3D_2^\circ - e^3F_3$	F	9294.66	2	V	10755.92	−11	$x^5F_4^\circ - g^5D_4$
F	10142.82	2		9856.49	−05	$x^5F_3^\circ - f^5D_2$	F	9259.05	15	V	10797.29	−07	$x^5D_4^\circ - f^5D_4$
F	10113.86	2		9884.71	+16	$a^3G_3 - z^3F_2^\circ$	E	9258.30	20	V	10798.16	−04	$y^3F_4^\circ - e^5F_4$
E	10065.080	60	V	9932.62	−04	$y^3D_1^\circ - c^3F_2$	F	9246.54	2	IV*	10811.89	+03	$b^3F_3 - z^3D_2^\circ$
F	10057.64	3	V	9939.97	00	$x^5F_4^\circ - f^5D_3$	F	9242.32	2		10816.82	+08	$x^5D_2^\circ - f^7D_1$
F	9980.55	2n		10016.74	−09	$x^5F_4^\circ - e^7P_3$	SS	9233.18	(1)		10827.54	−03	$y^5G_5^\circ - e^3G_5$
F	9977.52	1		10019.78	+06	$x^5F_3^\circ - f^7D_3$	O	9225.55	(1)		10836.49	−05	$d^3F_4 - x^3G_4^\circ$
F	9944.13	3n		10053.43	00	$y^7P_4^\circ - e^7P_4$	F	9217.54	5n	V	10845.91	+04	$x^5F_5^\circ - f^5F_5$
F	9917.93	2	IV*	10079.99	+15	$a^1F_3 - x^1G_4^\circ$	F	9214.45	6	V	10849.54	+05	$x^5D_4^\circ - e^7P_4$
E	9889.082	40	V	10109.39	−05	$x^5F_4^\circ - e^5G_5$	E	9210.030	6	IV*	10854.75	+01	$b^3P_1 - y^5D_2^\circ$
SS	9881.54	(1)		10117.11	−03	$d^3F_3 - x^3F_3^\circ$	F	9199.52	2n		10867.15	−09	$x^5F_4^\circ - f^5F_4$
F	*9868.09	3	V	10130.90	+07 / +09	$x^5F_2^\circ - e^5S_2$ / $x^5F_2^\circ - c^7F_3$	F	9178.57	1n		10891.96	−01	$x^5D_2^\circ - f^7D_3$
E	9861.793	30	V	10137.37	−13	$x^5F_3^\circ - e^5G_4$	U	9173.83	(1)		10897.58	+12	$a^3D_2 - y^3F_2^\circ$
F	9839.38	1		10160.46	−04	$d^3F_3 - w^3D_2^\circ$	F	9173.46	4nd		10898.02	+19	$x^5F_5^\circ - e^3D_2$
F	9834.04	3n	V	10165.97	+15	$x^5F_5^\circ - f^5D_4$	U	9164.51	(1)		10908.67	+06	$x^5D_4^\circ - f^5D_3$
F	9811.36	2		10189.47	+06	$y^7P_4^\circ - e^7P_3$	SS	*9156.94	(2)		10917.68	+15 / +17	$x^5D_2^\circ - e^5S_2$ / $x^5D_2^\circ - e^7F_3$
E	9800.335	20	V	10200.94	−06	$x^5F_2^\circ - e^5G_3$	F	9155.9	1		10918.9	−3	$x^5F_1^\circ - g^5D_2$
F	9786.62	2		10215.24	+04	$y^3F_3^\circ - e^5F_4$	E	9147.800	5n	V	10928.59	+14	$x^5F_2^\circ - g^5D_3$
F	9783.96	3	V	10218.01	+06	$x^5F_5^\circ - e^7P_4$	F	9146.11	3	IV*	10930.61	+03	$b^3F_3 - z^3F_3^\circ$
E	9763.913	15	V	10238.99	−02	$x^5F_4^\circ - e^7F_5$							
E	9763.450	15	V	10239.48	−08	$x^5F_1^\circ - e^5G_2$							

TABLE B—(Continued)

Ref	λ I A	Int	T C	Observed	o-c	Desig	Ref	λ I A	Int	T C	Observed	o-c	Desig
E	9118.888	20	IV*	10963.24	00	$b^3P_2 - y^5D_2°$	O	8515.08	20	IV*	11740.65	+06	$b^3G_3 - z^3G_3°$
F	9117.10	2		10965.39	+05	$b^3P_0 - y^5D_1°$	E	8514.075	150	II	11742.04	+02	$a^5P_2 - z^5P_2°$
F	9103.64	1		10981.60	+01	$y^5F_5° - e^5D_4$	O	8497.00	8	V	11765.63	-02	$y^3F_3° - e^3F_2$
F	9100.50	5n	V	10985.40	-07	$x^5D_4° - e^7P_3$	O	8471.75	2	V	11800.70	00	$x^5D_3° - g^5D_3$
E	9089.413	30	IV*	10998.80	+01	$b^3G_5 - z^5G_5°$	E	8468.413	300	II	11805.35	+01	$a^5P_1 - z^5P_1°$
E	9088.326	50	IV*	11000.11	+01	$b^3P_1 - z^3P_2°$	E	8439.603	20	V	11845.65	-04	$y^3F_4° - e^9F_4$
SS	9084.22	(1)		11005.09	-01	$y^5F_3° - e^5D_2$	O	8424.14	2n	V	11867.39	-01	$x^5D_3° - e^5P_3$
F	*9080.48	3n		11009.62	{-13 / -06}	$x^5D_3° - e^5G_4$ / $x^5F_4° - f^5F_3$	O	8422.95	2	V	11869.07	-04	$c^3F_3 - x^3D_2°$
E	9079.599	8	V	11010.68	-03	$y^3F_2° - e^3F_3$	O	8401.42	2	IV*	11899.49	00	$a^3P_0 - z^3D_1°$
F	*9070.42	2		11021.82	{+03 / -06}	$y^5F_4° - e^5D_3$ / $x^5F_3° - e^3D_1$	E	8387.781	1200	II	11918.83	+01	$a^5P_3 - z^5P_2°$
F	9062.24	2		11031.77	+01	$x^5F_2° - g^5D_2$	E	8365.642	25	IV?	11950.38	+03	$a^3D_3 - y^3D_3°$
F	9052.6	1		11043.5	-1	$y^5G_4° - e^3G_4$	E	8360.822	8	V	11957.26	-01	$z^3G_3° - e^3F_2$
SS	9036.72	(1)		11062.93	+03	$x^5D_2° - e^3D_3$	R	8342.95	(-)		11982.88	-09	$x^5D_2° - g^5D_1$
F	9030.67	1		11070.34	+07	$b^3P_1 - y^5D_1°$	E	8339.431	80	V	11987.94	-01	$z^3G_4° - e^5F_3$
F	9024.47	15	V	11077.94	-14	$x^5D_4° - e^5G_5$	E	8331.941	200	V	11998.71	-02	$z^3G_5° - e^5F_4$
F	9019.84	2		11083.63	-08	$x^5F_1° - g^5D_1$	E	8327.063	1200	II	12005.74	+01	$a^5P_2 - z^5P_1°$
F	9013.90	1		11090.93	+11	$a^3P_2 - z^5P_2°$	E	8293.527	20	V	12054.29	-05	$a^3D_2 - y^3D_2°$
E	9012.098	30	V	11093.15	+01	$x^5F_5° - g^5D_4$	E	8275.91	4n	V	12079.95	+01	$x^5D_3° - g^5D_2$
F	9010.55	2	IV*	11095.06	+07	$b^3F_2 - z^3F_2°$	O	8274.28	6	IV?	12082.33	+11	$X_3 - s^3D_3°$
F	9008.37	2		11097.74	+06	$X_3 - u^3D_3°$	M	8264.27	3	V	12096.96	+05	$X_2 - s^3D_2°$
F	9006.72	1		11099.78	+06	$x^5D_2° - e^7F_2$	E	8248.151	30	V	12120.60	-02	$z^3G_4° - c^5F_4$
E	8999.561	100	III	11108.61	+01	$b^3P_2 - z^3P_2°$	E	8239.130	8	IV*	12133.87	-01	$a^3P_1 - z^3D_2°$
F	8984.87	3	V	11126.77	+06	$x^5F_1° - g^5D_0$	E	8232.347	50	V	12143.87	-02	$z^3G_3° - e^5F_3$
E	8975.408	10	IV*	11138.50	+01	$b^3G_4 - z^5G_4°$	E	8220.406	1500	V	12161.51	-02	$z^5G_5° - e^5F_5$
F	8946.25	1		11174.80	+04	$b^3P_1 - y^5D_0°$	E	8207.767	40	V	12180.24	00	$z^3G_2° - e^3F_2$
E	8945.204	20	V	11176.11	00	$x^5F_4° - g^5D_3$	E	8198.951	80	V	12193.34	-04	$z^3G_4° - e^3F_4$
F	8943.00	3	IV*	11178.86	+09	$b^3P_2 - y^5D_1°$	O	8186.80	10nd?	V	12211.43	-02	$x^5D_4° - e^5P_3$
F	8929.04	5	V	11196.34	+07	$x^5F_3° - g^5D_1$	O	8179.03	(1)	IV*?	12223.03	-03	$z^5G_5° - e^5F_5$
F	8919.95	10	V	11207.75	{+06 / +09}	$x^5F_2° - g^5D_2$ / $(x^5D_4° - e^7F_5)$	O	*8149.59	3	V	12267.18	{+14 / -13}	$d^3F_3 - v^3D_3°$ / $d^3F_3 - w^3F_3°$
F	8916.26	1	IIA	11212.39	+09	$a^3F_2 - z^7P_3°$	E	8096.874	10	IV*	12347.06	00	$c^3F_4 - x^3D_3°$
F	8876.13	2	IV*	11263.08	-14	$x^5D_0° - f^5F_1$	E	8085.200	500	V	12364.88	-02	$z^5G_2° - e^5F_1$
F	8868.42	3	IV*	11272.87	+03	$b^3G_3 - z^5G_3°$	E	8080.668	10nd?	V	12371.82	-21	$a^3D_2 - y^3D_1°$
E	8866.961	150	V	11274.73	-04	$y^3F_4° - e^3F_4$	O	8075.13	4	II	12380.30	+04	$a^5F_4 - z^7D_5°$
F	8863.64	1p?		11278.95	-06	$y^7P_2° - e^7F_2$	O	8047.60	15	II	12422.65	+04	$a^5F_5 - z^7D_6°$
F	8846.82	5	V	11300.40	-11	$x^5D_1° - f^5F_2$	E	8046.073	600	V	12425.01	-01	$z^5G_3° - e^5F_2$
E	8838.433	30	IV*	11311.12	+02	$b^3P_0 - z^3P_1°$	E	8028.341	50	V	12452.45	-05	$z^5G_3° - e^3F_3$
E	8824.227	200	II	11329.33	+01	$a^5P_2 - z^5P_3°$	E	7998.972	700	V	12498.17	-02	$z^5G_4° - e^5F_3$
F	8814.5	2		11341.8	0	$X_3 - t^3D_3°$	O	7959.21	(1)		12560.61	-05	$x^5F_4° - h^5D_4$
SS	8808.173	4n		11349.98	-01	$x^5D_1° - f^5F_1$	O	7955.81	(1)		12565.98	-08	$x^5F_4° - f^5P_3$
E	8804.624	10	IV*	11354.55	+02	$a^3P_2 - z^5P_1°$	E	7945.878	600	V	12581.68	{-06 / +16}	$z^5G_5° - e^5F_4$ / $(a^3P_1 - z^3F_2°)$
F	8796.42	2		11365.14	+08	$x^5D_3° - e^7G_4$	O	7941.09	10	IV*	12589.27	00	$a^3D_1 - y^3D_1°$
E	8793.376	120	V	11369.08	-05	$y^3F_3° - e^3F_3$	F	7937.166	700	V	12595.50	-02	$z^5G_5° - e^5F_4$
F	8790.62	10n	V	11372.64	-14	$x^5D_2° - f^5F_3$	E	7912.866	6	IIA	12634.18	00	$a^5F_5 - z^7D_4°$
F	8784.44	5	V	11380.64	+02	$x^5D_3° - g^5D_4$	O	7879.84	1	V	12687.13	-14	$x^5F_4° - f^5G_5$
E	8764.000	100	V	11407.19	-05	$y^3F_2° - e^3F_3$	O	7869.65	4	V	12703.55	-08	$z^5G_4° - e^3F_4$
E	8757.192	50	IV	11416.05	+02	$b^3P_1 - z^3P_1°$	O	7855.48	4n	V	12726.47	-12	$x^5F_3° - f^5P_2$
F	8747.32	2		11428.94	+15	$b^3G_3 - z^3G_4°$	O	7844.66	2	V	12744.02	-18	$y^3D_1° - e^3D_2$
SS	8729.171	(2)		11452.70	-06	$a^1P_1 - y^3D_1°$	E	7832.224	400	V	12764.26	-04	$z^3G_4° - e^3F_3$
F	*8713.19	10	V	11473.70	{+01 / +01}	$b^3G_5 - z^5G_4°$ / $x^5D_2° - f^5F_2$	E	7780.586	300	V	12848.97	-06	$y^3D_3° - e^3D_3$
F	8710.29	20n	V	11477.53	+12	$x^5D_4° - f^5F_5$	O	7751.18	5n	V	12897.72	-04	$x^5F_5° - h^5D_4$
O	8699.43	4n	V	11491.85	+02	$x^5D_3° - f^5F_4$	E	7748.281	125	IV	12902.54	-01	$b^3G_5 - y^3F_4°$
E	8688.633	1500	II	11506.13	00	$a^5P_3 - z^5P_3°$	O	7742.71	4n	V	12911.83	-01	$x^5F_5° - f^5G_6$
E	8674.751	60	III	11524.55	+02	$b^3P_2 - z^3P_1°$	O	7723.20	4	IV*	12944.44	+02	$a^3P_2 - z^3D_3°$
E	8661.908	600	II	11541.63	+01	$a^5P_1 - z^5P_2°$	E	7710.390	25	V	12965.95	-02	$y^5F_4° - e^5F_5$
E	8621.612	10	IV*	11595.58	00	$b^3G_5 - z^3G_5°$	E	7664.302	80	IV	13043.92	00	$b^3G_4 - y^3F_3°$
E	8611.807	40	III	11608.78	00	$b^3P_1 - z^3P_0°$	E	7661.223	30	V	13049.16	-03	$y^5F_3° - e^5F_4$
O	8598.79	4	V	11626.35	+08	$z^3G_5° - e^5F_5$	L	7653.783	6		13061.84	-06	$y^3D_2° - e^3D_2$
O	8592.97	2n	V	11634.23	-04	$x^5D_3° - f^5F_3$	E	7620.538	25	V	13118.83	-05	$y^3D_3° - e^3D_3$
E	8582.267	15	IV*	11648.74	00	$b^3G_4 - z^3G_4°$	O	7605.32	2n	V	13145.08	+06	$x^5F_4° - e^5G_5$
W	8559.98	(1)		11679.06	-05	$a^1F_3 - t^3D_3°$	E	7586.044	150	V	13178.48	-04	$z^5G_5° - e^3F_4$
E	8526.685	8	V	11724.67	-01	$x^5D_4° - g^5D_4$	E	7583.796	50	IV*	13182.38	00	$b^3G_3 - y^3F_2°$
							E	7568.925	30	V	13208.28	-02	$y^5F_2° - e^5F_3$
							O	7563.03	1n	V	13218.58	+01	$y^3D_1° - g^5D_1$

TABLE B—(*Continued*)

Ref	λ I A	Int	T C	Observed	o −c	Desig
O	7559.68	1n	V	13224.44	00	$x^5F_3°$ — e^3G_4
U	7541.61	(1)		13256.14	−10	$z^3F_3°$ — e^5D_3?
E	7531.171	60	V	13274.50	−05	$z^5G_4°$ — e^3F_3
E	7511.045	800	V	13310.07	−02	$y^5F_5°$ — e^5F_5
L	7507.300	8	V	13316.69	−08	$z^5G_3°$ — e^3F_2
V	7498.56	1	IV*	13332.23	−02	c^3F_3 — $u^5D_3°$
E	7495.088	400	V	13338.40	−03	$y^5F_4°$ — e^5F_4
L	7491.678	12	V	13344.48	−02	$y^5F_1°$ — e^5F_2
SS	7481.934	(1)		13361.85	−02	$y^3D_2°$ — e^3D_1
SS	7476.376	(1)		13371.79	+04	$y^3D_2°$ — g^5D_3
O	7473.56	(1)		13376.82	−02	$y^5P_2°$ — f^5D_3
V	7461.534	(1)		13398.40	00	b^3F_4 — $y^5F_4°$
V	7454.02	(1)		13411.89	−03	c^3F_2 — $u^5D_1°$
V	7447.43	1	V	13423.76	−08	$x^5D_3°$ — g^5F_4
E	7445.776	200	V	13426.74	{−02 / −14}	$y^5F_3°$ — e^5F_3 / $(a^3P_2 — z^3F_3°)$
L	7443.031	2	IV*	13431.69	−05	c^3F_2 — $x^3F_2°$
V	7440.98	2n	V	13435.40	−05	$x^5D_4°$ — g^5F_5
M	7430.90	1−	IV*	13453.62	−09	$y^5P_2°$ — e^7P_3
O	7430.73.	(1)		13453.93	+01	$w^5F_5°$ — i^5D_4
M	7430.58	1−	IV*	13454.20	−05	b^3F_3 — $y^5F_3°$
O	7421.60	1−	V	13470.48	−10	$y^5P_1°$ — f^5D_1
E	7418.674	5	IV*	13475.79	−01	c^3F_3 — $u^5D_2°$
E	7411.178	100	V	13489.42	−01	$y^5F_2°$ — e^5F_2
E	7401.689	4	IV*	13506.72	−05	c^3F_2 — $w^3D_1°$
E	7389.425	80	V	13529.13	−02	$y^5F_1°$ — e^5F_1
L	7386.394	8n	V	13534.68	−02	$x^5D_4°$ — f^5P_3
V	7382.99	1n	V	13540.92	−15	$y^5P_2°$ — f^5D_2
O	7370.16	1	V	13564.50	−08	$y^3D_3°$ — e^3D_2
O	7366.37	1	V	13571.48	+04	$y^5P_1°$ — f^5D_0
O	7363.96	1n	V	13575.92	−08	$x^5D_3°$ — h^5D_2
V	7353.528	1	V	13595.17	−03	$y^3D_3°$ — g^5D_3
V	7351.56	4	V	13598.81	−03	$x^5D_3°$ — f^5P_2
V	7351.160	2n	V	13599.55	−05	$x^5D_2°$ — g^5F_3
V	7333.62	1n	V	13632.08	−12	$y^5F_3°$ — e^5F_4
L	§*7320.694	5n	V	13656.15	{−04 / +24}	$y^5P_3°$ — f^5D_4 / $x^5D_4°$ — f^5G_5
I	7311.101	12	V	13674.07	−02	$y^5F_2°$ — e^5F_1
L	§7307.938	8	IV*	13679.99	−01	c^3F_3 — $x^3F_3°$
V	7306.61	3	V	13682.47	−08	$y^5F_5°$ — e^5F_4
O	7300.47	1n	V	13693.98	+08	$x^5D_2°$ — f^5P_1
V	7295.00	1−	V	13704.25	−01	$y^5P_2°$ — f^7D_3
I	7293.068	15	V	13707.88	−01	$y^5F_3°$ — e^5F_2
V	7292.856	3n	V	13708.28	−04	$y^5P_3°$ — e^7P_4
I	7288.760	10	V	13716.02	+02	$y^5F_4°$ — e^5F_3
V	7285.286	1	V	13722.52	−04	$y^5P_2°$ — f^5D_1
L	7284.843	4	IV*	13723.35	−01	c^3F_3 — $w^3D_2°$
V	7282.39	1n	V	13727.98	+04	$x^5D_1°$ — h^5D_1
V	7261.54	3n	V	13767.40	−04	$y^5P_3°$ — f^5D_3
SS	7256.142	1−	V	13777.64	−03	$x^5D_3°$ — f^3D_3
V	7244.86	2n	V	13799.09	−05	$x^5D_3°$ — f^5G_4
I	7239.885	6	V	13808.58	+01	$z^3P_2°$ — e^5F_3
O	7228.69	1	IV*	13829.96	+03	a^3G_3 — $z^3G_3°$
I	7223.668	12	IV*	13839.58	00	c^3P_2 — $y^3D_3°$
V	*7222.88	(1)		13841.08	{−18 / −01}	$x^5F_3°$ — f^3F_4 / $y^5P_2°$ — f^7D_2
V	7221.22	2n	V	13844.27	−03	$y^5P_3°$ — e^7P_3
I	7219.686	5	IV*	13847.21	+04	c^3F_4 — $u^5D_4°$
V	7212.47	1n	V	13861.06	−02	$x^5D_3°$ — g^5F_3
E	7207.406	500	V	13870.80	−02	$y^5D_3°$ — e^5F_4
V	7207.123	6	IV*	13871.34	−01	c^3F_4 — $u^5D_3°$
O	7194.92	1	V	13894.87	+02	$x^5D_0°$ — g^5F_1
O	7191.66	(1)		13901.17	+05	$x^5D_2°$ — h^5D_1
V	7189.17	3	IV*	13905.98	−03	c^3P_1 — $y^3D_2°$
E	7187.341	800	V	13909.52	−03	$y^5D_4°$ — e^5F_5

Ref	λ I A	Int	T C	Observed	o −c	Desig
V	7181.93	1n	V	13920.00	−05	$x^5D_4°$ — h^5D_3
L	7181.222	10	V	13921.38	−05	$y^5F_4°$ — e^3F_4
V	7180.020	1	IV*	13923.71	−03	a^3F_4 — $z^5D_4°$
V	7176.886	2n	V	13929.78	−04	$x^5D_2°$ — f^5G_3
V	7175.937	3	V	13931.64	−03	$y^5P_3°$ — f^5D_2
E	7164.469	250	V	13953.93	−01	$y^5D_2°$ — e^5F_3
V	7158.502	1	V	13965.56	−04	$z^5P_2°$ — e^7D_3
V	7155.64	3n	V	13971.14	−04	$x^5D_1°$ — f^5G_2
V	7151.495	1	IV*	13979.24	−03	a^3P_0 — $y^5D_1°$
R	*7148.69	(−)		13984.73	{+07 / +03}	$y^5F_2°$ — e^3F_3 / $z^5S_2°$ — e^3P_3
V	*7145.317	5	V	13991.33	{+05 / +03}	$y^5P_2°$ — e^7F_3 / $y^5P_2°$ — e^5S_2
V	7142.522	4n	V	13996.80	−04	$x^5D_3°$ — h^5D_2
V	7132.989	8	IV*	14015.51	−02	c^3F_4 — $x^3F_4°$
I	7130.942	150	V	14019.52	−02	$y^5D_1°$ — e^5F_2
L	7112.176	3	IV*	14056.52	−01	b^3G_4 — $y^3D_3°$
I	7107.461	4	IV*	14065.84	−03	c^3F_3 — $w^5G_2°$
I	7095.425	3	V	14089.73	+03	$z^3P_2°$ — e^5F_2
SS	7091.942	(1)		14096.68	−01	$x^5D_3°$ — e^3G_4
O	7091.83	(1)		14096.86	−08	$x^5D_3°$ — f^3D_2
I	7090.404	40	V	14099.69	−01	$y^5D_0°$ — e^5F_1
V	*7086.76	2	V	14106.94	{+03 / −05}	$x^5F_2°$ — f^3F_3 / $z^5P_3°$ — e^7D_4
V	7083.396	1n	V	14113.64	−02	$x^5D_4°$ — e^3G_3
V	7071.88	1	V	14136.62	−05	$y^5P_2°$ — e^3D_3
SS	7069.54	1−	IV*	14141.30	00	b^3F_4 — $z^5G_3°$
I	7068.415	40	IV*	14143.54	−02	c^3F_4 — $w^3D_3°$
O	7044.60	(1)		14191.36	+06	$x^5D_3°$ — f^5G_3
V	7038.818	2	V	14203.02	−10	$y^5F_3°$ — e^3F_3
I	7038.251	40	V	14204.16	−04	$y^5D_1°$ — e^5F_1
V	7027.60	(1)		14225.69	00	d^3F_3 — $v^3F_2°$
V	7024.649	10n	V	14231.66	−03	$y^5P_2°$ — f^7D_3
V	7024.084	5	IV*	14232.81	−05	c^3F_4 — $z^3H_4°$
L	7022.976	50	V	14235.06	−01	$y^5D_2°$ — e^5F_3
V	7016.436	60	V	14248.41	+02	$y^5D_3°$ — e^5F_3
V	7016.075	20	IV*	14249.06	−04	a^3P_1 — $y^5D_2°$
Q	7014.99	(1)		14251.26	00	a^3H_4 — $y^5F_4°$
V	7011.364	3	IV*	14258.64	−01	d^3F_4 — $v^3F_4°$
V	7010.362	2	IV*	14260.67	−06	d^3F_2 — $v^3F_2°$
V	7008.014	5	V	14265.45	−11	$y^5F_5°$ — e^3F_4
V	7000.633	3	IV*	14280.49	−02	c^3F_3 — $w^5G_3°$
I	6999.902	30	V	14281.98	−02	$y^5D_4°$ — e^5F_4
I	6988.530	5	IV*	14305.23	+01	a^3H_5 — $y^5F_5°$
I	6978.855	100	III	14325.06	+03	a^3P_0 — $z^3P_1°$
V	6977.445	4	IV*	14327.95	−01	d^3F_4 — $u^3G_5°$
V	6976.934	3	IV*	14329.00	−01	d^3F_3 — $v^3F_4°$
V	6976.306	1	V	14330.29	−10	$y^5P_1°$ — e^3D_2
V	6971.95	1	IV*	14339.24	−02	b^3G_3 — $y^3D_2°$
U	6960.343	2	V	14363.15	−03	d^3F_4 — $4_4°$
SS	6951.656	1−	V	14381.10	−09	$y^5F_2°$ — e^5F_3
I	*6951.261	25	V	14381.92	{+03 / +05}	$y^5P_3°$ — e^5S_2 / $y^5P_3°$ — e^7F_3
V	*6947.501	3	V	14389.70	{+04 / −20}	d^3F_3 — $v^3F_3°$ / d^3F_4 — $5°$
I	6945.208	150	III	14394.45	−02	a^3P_1 — $z^3P_2°$
L	*6933.628	6	IV*	14418.49	{−01 / +07}	a^3H_5 — $y^5F_4°$ / c^3F_3 — $w^5G_2°$
U	6933.04	1	V	14419.72	−01	$y^5D_2°$ — e^5F_1
V	6930.64	1	V	14424.71	+01	d^3F_2 — $v^3F_3°$
I	6916.702	60	V	14453.78	−05	$y^5D_3°$ — e^5F_4
V,	6911.52	1	IV*	14464.61	−02	a^3P_1 — $y^5D_1°$
V	6898.31	3	V	14492.31	−05	$y^5F_4°$ — e^3F_3
L	6885.772	20	V	14518.70	−05	$y^3F_2°$ — e^3D_1
M	6881.74	1	V	14527.21	−05	$y^5P_3°$ — e^3D_3

TABLE B—(*Continued*)

Ref	λ I A	Int	T C	Observed	o −c	Desig	Ref	λ I A	Int	T C	Observed	o −c	Desig
V	6880.65	2	V	14529.51	−01	$y^5D_3° - e^5F_2$	V	6653.88	(1)		15024.68	−07	$y^5D_3° - e^3F_3$
V	6875.98	1	IV*	14539.38	00	$c^3F_2 - x^3P_2°$	SS	6648.121	1−	IIA	15037.70	−08	$a^5F_1 - z^7F_2°$
V	6875.45	1	IV*	14540.50	00	$a^3H_4 - y^5F_3°$	V	6646.98	(1)		15040.28	{−09 / −18}	$b^3F_2 - z^3G_3°$ / $(z^2G_4° - f^7D_4)$
V	6862.481	4n	V	14567.98	+04	$y^5P_3° - e^7G_4$	SS	6639.897	2	V	15056.32	−04	$c^3F_4 - v^5F_4°$
V	6861.93	2	IV*	14569.15	+02	$a^3P_1 - y^5D_0°$	SS	6639.717	4	V	15056.73	−01	$y^5P_2° - g^5D_1$
SS	6860.953	1−	IV*	14571.22	00	$b^3P_2 - y^5P_1°$	SS	6634.123	4n	V	15069.41	−07	$y^3D_2° - f^3D_3$
V	6860.29	1	IV*	14572.63	00	$b^3F_2 - z^5G_3°$	K	6633.764	50	V	15070.24	−04	$y^5P_3° - e^5P_3$
K	6858.164	40	V	14577.15	−04	$y^3F_3° - e^3D_2$	M	6633.44	4n	V	15070.98	−08	$y^3D_1° - f^3D_2$
V	6857.25	4	IV*	14579.09	00	$c^3F_4 - z^1G_4°$	L	6627.558	5	V	15084.36	−01	$y^3F_4° - g^5D_3$
V	6855.74	2	V	14582.30	−07	$y^5P_2° - e^3D_2$	V	6625.04	1	IIA	15090.09	−03	$a^5F_1 - z^7F_1°$
I	6855.176	150	V	14583.50	−01	$y^5P_3° - g^5D_4$	SS	6613.808	1−	IIIA	15115.72	+05	$a^5F_1 - z^7F_0°$
V	6854.82	2	IV*	14584.26	+03	$d^3F_4 - 6_5°$	I	6609.116	30	III	15126.45	00	$b^3F_4 - z^3G_4°$
SS	6851.652	1−	IV*	14591.00	−02	$a^3F_2 - z^5F_2°$	V	6608.03	2	IV*	15128.93	.00	$a^3P_2 - y^5D_3°$
SS	6847.603	1−	V	14599.63	−02	$y^5F_3° - e^3F_2$	V	6604.67	(1)		15136.63	−09	$y^3D_1° - h^5D_1$
SS	6844.683	1−	IIIA?	14605.86	{−02 / +02}	$a^3F_3 - z^5F_4°$ / $(b^1D_2 - v^3D_2°)$	V	6597.607	15n	V	15152.83	−06	$y^3D_2° - g^5F_3$
I	6843.671	60	V	14608.02	−04	$y^3F_4° - e^3D_3$	I	6593.878	60	III	15161.40	−01	$a^3H_5 - z^5G_5°$
V	6842.668	6n	V	14610.16	+03	$y^5P_1° - e^5P_1$	B	6592.919	300	III	15163.61	+01	$a^3G_4 - y^3F_3°$
I	6841.349	80	V	14612.97	−01	$y^5P_2° - g^5D_3$	V	6591.32	2	V	15167.29	00	$d^3F_4 - t^3D_3°$
V	6839.828	4	IV*	14616.22	+02	$b^3F_4 - z^5G_4°$	V	6581.22	2	III?	15190.56	−02	$a^3F_4 - z^5F_4°$
O	6837.00	3	IV*	14622.27	+05	$d^3F_4 - u^3G_4°$	I	6575.022	30	IV	15204.88	+01	$b^3F_3 - z^3G_3°$
V	6833.24	1	V	14630.32	−04	$y^5P_1° - e^3D_1$	V	6574.238	3	IIA	15206.70	−01	$a^5F_2 - z^7F_2°$
I	6828.610	50	V	14640.24	00	$y^5P_1° - g^5D_2$	U	6571.22	(1)		15213.68	−11	$b^1D_2 - v^3G_3°$
SS	*6822.042	1−	V	14654.33	{+02 / −10}	$a^3P_0 - y^5F_1°$ / $d^3F_3 - t^5D_2°$	I	6569.231	50n	V	15218.29	−04	$y^3D_3° - g^5F_4$
O	6820.43	8n	V	14657.80	−07	$y^5P_1° - e^5P_2$	U	6556.79	(1)		15247.16	−03	$y^3D_2° - f^5P_1$
SS	6819.595	(1)	V	14659.59	+01	$y^5D_4° - e^5F_3$	W	6552.77	(2)		15256.51	−03	$a^1F_3 - w^1F_3°$
V	6810.28	20n	V	14679.64	−04	$y^5P_2° - e^5P_3$	B	6546.245	200	III	15271.72	00	$a^3G_3 - y^3F_2°$
L	6806.851	10	IV	14687.03	−01	$a^3G_4 - y^3F_4°$	U	6543.98	(1)		15277.01	−08	$z^5G_4° - f^5D_3$
V	6804.27	3	IV*	14692.61	+03	$d^3F_3 - u^3G_4°$	W	6539.72	(2)		15286.96	−06	$b^3G_3 - x^5D_4°?$
V	6804.020	5	V	14693.15	+01	$y^3F_2° - g^5D_1$	V	6533.97	8n	V	15300.41	−04	$y^5P_3° - e^5P_2$
V	6796.11	2	V	14710.25	+06	$y^5P_3° - v^5F_3°$	I	6518.376	20	IV	15337.02	00	$b^3P_2 - y^3D_3°$
V	6793.26	2	V	14716.42	+03	$c^3F_4 - w^5G_4°$	V	6509.56	(1)		15357.79	+14	$c^3F_4 - w^3G_5°$
V	6786.88	5	V	14730.25	−05	$y^5D_2° - e^3F_3$	V	6498.950	5	IIA	15382.86	−02	$a^5F_3 - z^7F_3°$
V	6783.71	2	IV*	14737.14	+01	$b^3F_3 - z^5G_3°$	K	6496.456	20n	V	15388.77	+02	$y^3D_2° - f^3D_2$
V	*6777.44	1	V	14750.77	{−05 / +06}	$c^3F_2 - x^3P_1°$ / $c^3F_3 - v^5P_2°$	U	6495.779	3	V	15390.37	−03	$y^3D_1° - g^5F_1$
L	6752.724	10	V	14804.76	+01	$y^5P_1° - g^5D_1,$	B	6494.985	1000	II	15392.25	00	$a^3H_6 - z^5G_5°$
I	6750.152	100	III	14810.41	+01	$a^3P_1 - z^3P_1°$	I	6481.878	20	III	15423.37	−01	$a^3P_2 - y^5D_2°$
V	6745.11	1	IV*	14821.47	−05	$d^3F_2 - x^1D_2°$	I	6475.632	12	IV	15438.25	00	$b^3F_4 - z^3G_3°$
V	6739.54	1	IIIA	14833.72	−03	$a^3F_3 - z^5F_3°$	V	6474.61	(1)		15440.69	−05	$b^3D_1 - v^5D_1°$
U	6738.02	4nl	V	14837.07	−08	$y^5P_3° - f^5F_3$	I	6469.214	15n	V	15453.57	{00 / −21}	$y^3D_1° - f^3D_1$ / $(a^3H_6 - z^5G_6°)$
L	6733.164	6	V	14847.77	+02	$y^5P_1° - g^5D_0$	I	6462.731	30	II	15469.07	{+01 / −03}	$a^3H_4 - z^5G_4°$ / $(a^5F_4 - z^7F_5°)$
V	6732.06	1	IV*	14850.20	+04	$d^3F_3 - u^3G_3°$	U	6451.587	(2)		15495.79	−11	$b^1G_4 - y^3G_5°$
V	6726.668	20n	V	14862.10	−01	$y^5P_2° - e^5P_1$	V	6450.99	(1)		15497.22	+04	$y^5P_2° - g^5G_4$
V	6725.39	2	V	14864.93	−08	$y^5D_4° - e^3F_4$	U	6438.775	(1)		15526.62	−05	$z^3G_4° - c^3D_3$
V	6717.556	3	V	14882.27	−07	$y^5P_2° - e^3D_1$	V	6436.43	(1)		15532.28	−05	$c^3F_2 - v^3D_1°$
V	6716.24	3	IV*	14885.18	−02	$d^3F_2 - u^3G_3°$	B	6430.851	300	II	15545.75	00	$a^5P_3 - y^5D_4°$
V	6715.410	5	V	14887.02	−03	$y^3F_3° - g^5D_2$	U	6428.793	(1)		15550.73	+02	$z^5G_4° - f^7D_4$
V	6713.76	3n	V	14890.68	+03	$y^3D_2° - f^5P_2$	B	6421.355	200	II	15568.74	−01	$a^3P_2 - z^3P_2°$
V	*6713.14	6d	V	14892.06	{+13 / −17}	$c^3F_3 - x^3P_2°$ / $y^5P_2° - g^5D_2$	K	6419.982	30n	V	15572.07	−09	$y^3D_3° - f^3D_3$
V	6710.31	2	III?	14898.34	+04	$a^3F_4 - z^5F_5°$	I	6411.658	400	IV	15592.29	−01	$z^5P_3° - e^5D_3$
I	6705.117	15n	V	14909.88	+02	$y^5P_2° - e^5P_2$	SS	6411.125	1n	V	15593.59	−05	$y^3D_3° - f^5G_4$
SS	6704.500	1	V	14911.25	−05	$y^5D_1° - e^3F_2$	I	6408.031	60	V	15601.11	−02	$z^5P_1° - c^5D_2$
L	6703.573	10	IV	14913.31	00	$a^3G_3 - y^3F_3°$	W	6406.42	(1)		15605.04	+07	$X_2 - u^3F_3°?$
V	6699.14	2	V	14923.18	+04	$d^3F_4 - u^3D_3°$	W	6402.4	(1)		15614.8	0	$y^5G_3° - g^5G_2$
R	6692.5	(1)		14937.98	−07	$y^5P_3° - f^5F_2$	U	6400.318	(50)	IA	15619.91	00	$a^5F_4 - z^7F_4°$
B	6677.993	600	III	14970.43	00	$a^3G_5 - y^3F_4°$	I	6400.010	800	IV	15620.67	00	$z^5P_2° - c^5D_4$
W	6671.36	(2)		14985.32	+07	$y^5G_5° - h^7D_5$	B	6393.605	400	II	15636.31	00	$a^3H_5 - z^5G_4°$
V	6667.73	(1)		14993.48	−02	$d^3F_3 - u^3D_3°$	U	6392.547	(1)		15638.90	−01	$a^3P_2 - y^5D_1°$
SS	6667.455	1−	IV*	14994.09	−08	$a^3H_4 - z^5G_5°$	I	6380.748	3	V	15667.82	−03	$c^3F_2 - w^3F_2°$
U	6665.48	(−)		14998.54	−10	$a^3F_3 - z^5F_2°$	V	6364.717	(1)		15707.28	−01	$d^3F_3 - t^3D_2°$
B	6663.446	80	III	15003.12	−03	$a^3P_1 - z^3P_0°$	V	6364.384	(1)		15708.11	+02	$y^3D_2° - g^5F_1$
V	6663.26	(1)		15003.53	−05	$y^3P_3° - g^5D_3$	V	6362.889	(2)		15711.80	+03	$c^3F_2 - z^1D_2°$
							I	6358.692	3	IA	15722.17	+02	$a^5F_5 - z^7F_6°$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig
U	6356.293	(1)		15728.10	+12	b^3F_2 — $y^5P_3°$
I	6355.038	4	III	15731.21	00	b^3P_1 — $y^3D_2°$
I	6344.154	2	III	15758.19	−01	a^3H_5 — $z^3G_5°$
V	6338.896	(1n)		15771.27	+01	$y^3D_2°$ — f^3D_1
K	6336.835	12	V	15776.40	−01	$z^5P_1°$ — e^5D_1
B	6335.335	10	III	15780.13	00	a^5P_2 — $y^5D_3°$
U	6330.856	(1n)		15791.29	−05	$y^3D_3°$ — h^5D_2
I	6322.693	5	III	15811.74	+06	b^3F_3 — $y^3F_4°$
B	6318.022	10	III	15823.37	00	a^3H_4 — $z^5G_3°$
V	6315.814	(2)		15828.90	+01	c^3F_4 — $y^1G_4°$
J	6315.316	(3)		15830.15	−02	c^3F_3 — $w^3F_3°$
V	6311.506	(1)		15839.71	00	b^3P_2 — $y^3D_2°$
U	6310.543	(1)		15842.13	−05	b^3G_5 — $x^5D_4°$
V	6303.46	(1n)		15859.93	00	$z^5G_6°$ — e^5G_5
K	6302.507	6	V	15862.32	−02	$z^5P_1°$ — e^5D_0
K	6301.515	15	IV	15864.82	−03	$z^5P_2°$ — e^5D_2
I	6297.800	5	III	15874.18	00	a^5P_1 — $y^5D_2°$
I	6290.968	3n	V	15891.42	−02	$y^3D_3°$ — f^3D_2
I	6280.625	2	IA	15917.59	−01	a^5F_5 — $z^7F_5°$
U	6271.289	(1)		15941.29	00	$z^5F_5°$ — e^7D_5
J	6270.238	(2)		15943.96	−01	b^3P_0 — $y^3D_1°$
U	6267.845	(1)		15950.05	−02	b^1D_2 — $z^1F_3°$
B	6265.140	6	III	15956.93	00	a^5P_3 — $y^5D_3°$
I	6256.370	4	III	15979.30	−01	a^3H_4 — $z^3G_4°$
I	6254.262	6	III	15984.69	+01	a^3P_2 — $z^3P_1°$
B	6252.561	20	III	15989.03	−01	a^3H_6 — $z^3G_5°$
K	6246.334	15	V	16004.97	−02	$z^5P_3°$ — e^5D_3
V	6245.84	(1)		16006.24	+07	$y^7P_4°$ — 1_5
I	6240.656	(2)		16019.53	−02	a^5P_1 — $z^3P_2°$
U	6240.266	(1)		16020.54	+14	c^3F_3 — $w^3F_2°$
Q	6232.735	(−)		16039.89	−04	$z^5F_5°$ — e^7D_3
K	6232.661	5	V	16040.08	−04	$z^5P_2°$ — e^5D_1
B	6230.728	25	III	16045.06	00	b^3F_4 — $y^3F_4°$
V	6229.234	(1)		16048.91	+01	b^3P_1 — $y^3D_1°$
U	6226.756	(1)		16055.29	−04	$z^3D_3°$ — e^5F_4
U	6221.661	(−)		16068.44	+03	a^5F_5 — $z^7F_4°$
U	6221.405	(1)		16069.10	−06	$z^3D_2°$ — e^5F_3
U	6220.774	(1)		16070.73	+03	$z^3F_4°$ — e^5F_4
I	6219.290	6	III	16074.57	−01	a^5P_2 — $y^5D_2°$
U	6217.283	(1)		16079.76	−05	X_3 — $v^1G_4°$
J	6215.152	(2)		16085.27	−01	c^3F_2 — $v^3G_3°$
I	6213.438	5	III	16089.71	−01	a^5P_1 — $y^5D_1°$
U	6212.045	(1)		16093.32	+16	$z^5G_4°$ — g^5D_4
J	6200.323	4	IV	16123.74	−01	b^3F_2 — $y^3F_3°$
U	6199.475	(1)		16125.95	+10	b^3F_4 — $y^5P_3°$
B	6191.562	20	II	16146.56	00	a^3H_5 — $z^3G_4°$
V	6188.037	(2ld)		16155.75	−13	$z^3F_2°$ — e^5F_4
U	6180.212	(2)		16176.21	−01	a^3G_4 — $y^3D_3°$
J	6173.343	3	III	16194.21	00	a^5P_1 — $y^5D_0°$
K	6170.492	4n	V	16201.69	+04	$y^3D_2°$ — e^3P_2
J	6165.366	(2)		16215.16	+02	c^3F_3 — $v^3G_4°$
U	6163.544	(1)		16219.95	00	a^5P_2 — $z^3P_2°$
U	6159.409	(1n)		16230.84	−10	$y^3F_3°$ — g^5F_4
J	6157.734	4	V	16235.26	00	c^3F_4 — $w^3F_4°$
L	6151.624	(2)		16251.38	00	a^5P_3 — $y^5D_2°$
V	6147.85	(−)		16261.36	−04	c^3F_4 — $v^3D_3°$
K	6141.734	4	V	16277.54	00	$z^5P_3°$ — e^5D_2
B	6137.696	18	III	16288.26	+01	b^3F_3 — $y^3F_3°$
J	6136.999	(2)		16290.11	00	a^5P_2 — $y^5D_1°$
B	6136.620	20	III	16291.12	00	a^3H_4 — $z^3G_3°$
SS	6130.358	(1)		16307.75	+02	a^3D_3 — $x^5P_3°$
J	*6127.913	(2)		16314.26	{−02 / +18}	c^3F_3 — $y^3H_4°$ / $y^5F_2°$ — e^7P_2
U	6109.308	(1)		16363.95	−07	b^3H_4 — $z^7H_5°$

Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig
SS	6107.104	(1)		16369.85	−04	$y^5F_3°$ — f^5D_2
K	6103.190	3	V	16380.35	−01	$y^3D_1°$ — e^2P_1
K	6102.178	5	V	16383.07	−01	$y^3D_1°$ — f^3F_2
SS	*6100.284	(1)		16388.15	{+02 / −14}	$y^5P_3°$ — h^5D_4 / $y^5P_2°$ — h^5D_3
V	6096.689	(1)		16397.82	−06	$z^3F_2°$ — e^3F_3
U	6094.419	(1)		16403.92	−15	$y^3F_2°$ — f^5P_1
V	6093.66	(1)		16405.97	+02	$y^3F_3°$ — f^5P_2
L	6089.566	(1)		16416.99	−10	a^1F_3 — $v^1G_4°$
V	6085.267	(1)		16428.59	−02	a^3G_3 — $y^3D_2°$
U	6082.709	(1)		16435.50	+02	a^5P_1 — $z^3P_1°$
V	6079.02	(1)		16445.48	−05	$y^3F_2°$ — h^5D_2
K	6078.496	4n	V	16446.90	−01	$y^3D_2°$ — f^3F_3
B	6065.487	15	III	16482.17	+01	b^3F_2 — $y^3F_2°$
V	6062.89	(1)		16489.23	−10	a^5P_3 — $y^5F_4°$
K	6055.987	4	V	16508.02	+01	$y^3D_3°$ — f^3F_4
U	6054.100	(2)		16513.17	−06	$z^5G_4°$ — g^5D_3
U	6043.738	(1)		16541.48	−19	b^3D_3 — $x^5G_3°$?
SS	6034.057	(2)		16568.02	−04	$z^5G_5°$ — g^5D_4
V	6032.67	(1)		16571.83	+07	$y^5F_4°$ — e^7P_3
B	6027.057	4	V	16587.26	+02	c^3F_4 — $v^3G_3°$
K	6024.066	15	V	16595.50	−03	$y^3F_4°$ — f^5G_5
W	*6021.82	(2n)		16601.69	{+06 / +03 / −07}	$y^5F_2°$ — e^7F_3 / $y^5F_2°$ — e^5S_2 / a^5P_2 — $y^5F_3°$
K	6020.173	10n	V	16606.23	−02	$y^3F_3°$ — f^5G_4
W	6016.66	(2)		16615.93	−20	a^1D_2 — $x^3D_3°$
K	6008.577	9	V	16638.28	−05	$z^3D_3°$ — e^3F_4
K	6007.961	(3n)		16639.98	−02	$y^3F_2°$ — f^5G_3
V	*6005.53	(1)		16646.72	{+06 / −04}	b^3F_3 — $y^3F_2°$ / $y^5F_5°$ — e^7F_6
K	6003.033	8	V	16653.64	−06	$z^3F_2°$ — e^3F_4
U	5997.805	(1)		16668.16	−03	$y^3F_3°$ — g^5F_3
K	5987.057	6	V	16698.08	+03	$y^3D_2°$ — e^3P_1
K	5984.805	8	IV	16704.37	+03	$y^3D_3°$ — e^3P_2
K	5983.704	6	V	16707.44	−07	$y^3F_4°$ — g^5F_4
K	5976.799	5	V	16726.74	−06	$z^3F_3°$ — e^3F_3
J	*5975.355	4	V	16730.78	00	$y^3D_1°$ — e^3P_0
U	5969.554	(2)		16747.04	+01	$y^5F_2°$ — e^3D_3
V	5963.25	(1)		16764.74	−02	a^5P_1 — $y^5F_1°$
U	5959.878	(1)		16774.23	+14	c^3F_3 — $w^3P_2°$
SS	*5958.246	(2)		16778.82	{−04 / −06}	a^5F_3 — $z^7P_2°$ / $y^5P_3°$ — h^5D_3
J	5956.702	(3)		16783.17	−02	a^5F_5 — $z^7P_4°$
U	5955.682	(1)		16786.05	+05	$z^3P_1°$ — e^5S_2
V	5952.749	3	V	16794.32	−09	$z^3F_2°$ — e^3F_2
V	*5949.35	(2)		16803.91	{−19 / −04}	a^5F_4 — $z^7P_3°$ / $y^3F_3°$ — h^5D_3
SS	5947.517	(1)		16809.09	−04	$y^5P_2°$ — h^5D_2
V	5940.972	(2)		16827.61	+09	$y^5F_5°$ — e^5G_6
K	5934.658	5	V	16845.51	−01	$z^3D_3°$ — e^3F_4
K	5930.173	8	V	16858.25	00	$y^3F_2°$ — e^3G_3
U	5929.700	(1)		16859.60	−08	$y^3F_4°$ — h^3D_3
V	5927.798	(2wd)		16865.01	+04	$y^3F_2°$ — g^5F_1
V	5920.520	(2)		16885.74	+03	b^3H_5 — $z^5H_5°$
U	5919.024	(1)		16890.01	−27	$y^5F_2°$ — $e^5G_3°$?
V	5916.250	(3)		16897.93	+01	a^3H_4 — $y^3F_4°$
V	*5914.16	8	V	16903.90	{+10 / −15}	$y^3F_3°$ — e^3G_4 / $y^3F_3°$ — f^3D_2
U	5909.986	(3)		16915.84	−01	$z^5D_4°$ — e^7D_5
U	5908.252	(2)		16920.80	−15	$z^7D_1°$ — d^3F_2
K	5905.673	3n	V	16928.19	+05	$y^3F_2°$ — f^3D_1
U	5902.527	(1)		16937.21	−09	d^3F_4 — $t^3G_5°$
U	5898.212	(1)		16949.60	+01	$y^3D_3°$ — f^3F_3

TABLE B—(Continued)

Ref	λ I A	Int	T C	Wave Number Observed	o—c	Desig
U	5895.007	(1)		16958.82	00	$d^3F_4 - 11_3{}^\circ$
W	5892.71	(2)		16965.43	−06	$y^5F_3{}^\circ - e^5D_3$
SS	5891.896	(1)		16967.77	−01	$d^3F_4 - 12_5{}^\circ$
U	5891.12	(1)		16970.01	−02	$b^3H_5 - z^5H_6{}^\circ$
K	5883.838	4	V	16991.01	−06	$z^3D_1{}^\circ - e^3F_2$
V	5880.00	(2wd)		17002.10	+08	$y^5P_3{}^\circ - f^5G_4$
U	5877.770	(1)		17008.55	+06	$y^5F_5{}^\circ - e^5G_5$
U	5873.219	(2)		17021.73	00	$y^5F_3{}^\circ - g^5D_4$
U	5871.289	(1)		17027.33	+04	$y^5D_3{}^\circ - f^5D_3$
V	5871.04	(1)		17028.05	−04	$z^7D_2{}^\circ - d^3F_2$
SS	5864.252	(1)		17047.76	−03	$y^5F_1{}^\circ - e^3D_2$
K	5862.357	8	V	17053.27	−01	$y^5F_4{}^\circ - e^3G_5$
K	5859.608	5	V	17061.27	−07	$y^5F_4{}^\circ - f^3D_3$
U	5859.197	(1)		17062.47	+11	$y^5F_1{}^\circ - f^5F_1$
U	5856.081	(2)		17071.55	+04	$b^1D_2 - y^1D_2{}^\circ$
U	5855.130	(1)		17074.32	−11	$y^5F_3{}^\circ - e^5H_4$
U	5853.195	(1)		17079.96	−12	$a^3F_4 - z^5P_3{}^\circ$
W	5852.19	(2n)		17082.90	+08	$y^5F_4{}^\circ - f^5G_4$
W	*5848.09	(2n)		17094.87	{−05 / +12}	$z^5D_3{}^\circ - e^7D_3$ / $y^3F_3{}^\circ - g^5F_2$
U	5844.879	(1)		17104.26	+10	$y^5D_3{}^\circ - e^7P_3$
U	5838.418	(1)		17123.19	−14	$z^3F_3{}^\circ - e^3F_2$
U	5837.703	(1)		17125.29	−01	$b^1D_2 - x^1D_2{}^\circ$
V	5816.36	(3d)		17188.13	+03	$y^3F_4{}^\circ - e^5H_5$
V	5815.16	(1)		17191.68	+16	$y^5D_3{}^\circ - f^5D_2?$
U	5814.816	(1)		17192.69	−03	$y^5F_2{}^\circ - e^3D_2$
U	5811.936	(1)		17201.21	−03	$c^3F_3 - x^1G_4{}^\circ$
U	5809.245	(2)		17209.18	−08	$z^3D_3{}^\circ - e^3F_3$
V	5806.727	(2)		17216.64	−03	$y^3F_3{}^\circ - e^3G_3$
SS	5805.774	(1)		17219.47	−03	$x^5F_4{}^\circ - i^5D_3$
U	5804.478	(1)		17223.31	−03	$y^5F_2{}^\circ - g^5D_3$
U	5804.072	(1)		17224.52	−10	$z^3F_4{}^\circ - e^3F_3$
V	5798.194	(2)		17241.98	−07	$z^3D_3{}^\circ - e^3F_2$
V	5793.932	(2)		17254.66	−06	$y^5F_4{}^\circ - e^3D_3$
V	5791.044	(2)		17263.27	−05	$z^5D_4{}^\circ - e^7D_4$
V	5784.69	(1)		17282.23	−08	$z^3F_3{}^\circ - e^5D_4$
V	*5780.83	(1)		17293.77	{−05 / +08 / −05}	$z^5D_2{}^\circ - e^7D_2$ / $z^3G_4{}^\circ - g^5F_5$ / $b^1G_4 - x^3F_3{}^\circ$
V	5780.621	(2)		17294.40	−04	$z^5D_3{}^\circ - e^7D_3$
V	5778.47	(1)		17300.83	−03	$b^5F_3 - y^3D_3{}^\circ$
J	5775.090	(5)		17310.96	00	$y^5F_4{}^\circ - g^5D_4$
SS	5769.336	(1)		17328.22	−09	$y^3F_3{}^\circ - e^5H_3$
K	5762.992	10	V	17347.30	00	$z^3P_2{}^\circ - e^3D_3$
V	5762.434	(1)		17348.98	−01	$b^3D_3 - u^5D_4{}^\circ$
U	5761.246	(1)		17352.56	+04	$b^5D_1 - y^3P_0{}^\circ$
V	5760.351	(1)		17355.25	−03	$b^5D_3 - y^3P_2{}^\circ$
SS	*5759.550	(2)		17357.67	{+02 / +05}	$y^5F_1{}^\circ - g^5D_2$ / $y^5P_3{}^\circ - g^7D_4$
U	5759.270	(1)		17358.51	−02	$y^3F_2{}^\circ - e^3P_2$
V	5754.41	(1)		17373.17	00	$b^3D_3 - u^5D_3{}^\circ$
J	5753.136	5	V	17377.02	−05	$z^3P_1{}^\circ - e^3D_2$
J	5752.043	(2)		17380.32	−05	$y^3F_4{}^\circ - e^3G_4$
U	5747.959	(1)		17392.67	−01	$y^3F_3{}^\circ - e^3H_4$
SS	5742.972	(1)		17407.77	−05	$y^5F_5{}^\circ - f^5F_5$
V	5741.861	(2)		17411.14	−05	$y^5F_3{}^\circ - e^3D_2$
J	5731.771	(3)		17441.79	−01	$y^5F_3{}^\circ - g^5D_3$
U	5727.75	(1)		17454.03	−10	$y^5P_2{}^\circ - g^7D_3$
U	5724.445	(1)		17464.11	+04	$z^3P_0{}^\circ - e^5P_1$
SS	5723.673	(1)		17466.47	−02	$z^3G_3{}^\circ - h^5D_3$
W	5720.8	(1n)		17475.2	−1	$y^7P_4{}^\circ - h^7D_5$
L	5717.845	(3)		17484.27	−03	$z^5P_0{}^\circ - e^3D_1$
V	*5715.107	(1)		17492.64	{−06 / −03}	$y^5F_2{}^\circ - e^3D_1$ / $y^5D_2{}^\circ - e^3D_3$
U	5712.145	(2)		17501.71	−03	$z^5F_2{}^\circ - e^5D_3$

Ref	λ I A	Int	T C	Wave Number Observed	o—c	Desig
V	5711.867	(2)		17502.57	−01	$y^5F_2{}^\circ - g^5D_2$
K	5709.378	10	IV	17510.20	+03	$z^5F_4{}^\circ - e^5D_4$
V	5708.109	(1)		17514.09	−05	$z^3G_4{}^\circ - f^5G_5$
U	5707.055	(1)		17517.33	−02	$b^3D_3 - x^3F_4{}^\circ$
U	5705.992	(2)		17520.59	−03	$y^3F_3{}^\circ - f^3F_4$
U	5705.475	(1)		17522.18	+02	$y^5F_1{}^\circ - g^5D_1$
U	5702.434	(1)		17531.52	−28	$b^3D_2 - u^5D_2{}^\circ?$
J	5701.553	7	III?	17534.23	−01	$b^3F_4 - y^3D_3{}^\circ$
W	5698.37	(2)		17544.02	+02	$b^1D_2 - t^3D_1{}^\circ$
W	5698.05	(1)		17545.01	−10	$b^3D_2 - y^3P_1{}^\circ$
V	5691.509	(1)		17565.17	+01	$y^5F_1{}^\circ - g^5D_0$
V	5686.532	(3)		17580.54	−02	$y^2F_4{}^\circ - e^3H_5$
W	5680.26	(1)		17599.96	−01	$c^3F_2 - v^3F_3{}^\circ$
V	5679.023	(2)		17603.79	00	$y^3F_2{}^\circ - f^3F_3$
SS	5672.273	(1)		17624.74	+03	$d^5F_3 - t^3G_3{}^\circ$
U	*5666.837	(1)		17641.64	{−11 / −09}	$y^5D_3{}^\circ - e^5S_2$ / $y^5D_3{}^\circ - c^7F_3$
U	5662.938	(1)		17653.79	−02	$b^1G_4 - z^1G_4{}^\circ$
B	5662.525	6	V	17655.08	−01	$y^5F_5{}^\circ - g^5D_4$
W	5661.36	(1)		17658.71	+02	$z^3P_0{}^\circ - g^5D_1$
W	5660.79	(1)		17660.49	+03	$b^3D_2 - w^3D_3{}^\circ$
B	5658.826	10	IV	17666.62	−01	$z^5F_3{}^\circ - e^5D_3$
U	5658.537	(1)		17667.52	00	$z^5F_1{}^\circ - e^5D_2$
V	*5655.506	4	V	17676.99	{−06 / −04}	$z^3P_1{}^\circ - e^3D_1$ / $x^5F_4{}^\circ - g^5G_5$
V	5655.179	(2)		17678.01	−04	$x^5F_3{}^\circ - g^5G_4$
U	5653.889	(1w)		17682.05	+01	$z^3G_5{}^\circ - g^5F_5$
U	5652.317	(1)		17686.96	+03	$z^3P_1{}^\circ - g^5D_2$
U	5650.721	(1)		17691.96	−07	$x^5F_2{}^\circ - g^5G_3$
V	5650.01	(1)		17694.18	−01	$x^5F_1{}^\circ - g^5G_2$
U	5649.66	(1)		17695.28	−11	$a^1I_6 - z^3H_5{}^\circ$
U	5641.453	(2)		17721.02	−02	$y^5F_3{}^\circ - g^5D_2$
W	5640.46	(1n)		17724.14	+06	$y^5P_3{}^\circ - e^5H_3$
I	5638.266	3	V	17731.04	00	$y^5F_4{}^\circ - g^5D_3$
U	5636.693	(1)		17735.99	−01	$b^3D_2 - x^3F_3{}^\circ$
U	5635.845	(1)		17738.66	−01	$y^5F_3{}^\circ - e^5P_2$
V	5633.970	(2)		17744.56	+05	$x^5F_5{}^\circ - g^5G_6$
U	5631.72	(2)		17751.65	+09	$z^3G_3{}^\circ - g^5F_3$
B	5624.549	10	IV	17774.28	00	$z^5F_2{}^\circ - e^5D_2$
V	5624.056	(1)		17775.84	−05	$z^3G_5{}^\circ - h^5D_4$
V	5620.527	(1)		17787.00	−12	$y^5D_3{}^\circ - e^3D_3$
W	*5620.04	(1)		17788.54	{+09 / −01}	$y^5P_3{}^\circ - e^3H_4$ / $c^3F_3 - v^3F_2{}^\circ$
V	5619.60	(1)		17789.94	−03	$z^3G_5{}^\circ - f^5G_6$
U	5618.633	(1)		17793.00	00	$z^3P_2{}^\circ - e^3D_2$
W	5617.22	(1)		17797.47	−05	$a^3D_3 - w^5F_4{}^\circ$
B	5615.652	50	IV	17802.44	−01	$z^5F_5{}^\circ - e^3D_4$
U	5615.301	(2)		17803.55	00	$b^3F_3 - y^3D_2{}^\circ$
J	5602.955	10	IV	17842.78	−01	$z^5F_1{}^\circ - e^5D_1$
U	5602.770	(2)		17843.37	+01	$y^5D_3{}^\circ - g^5D_4$
V	*5600.242	(1)		17851.43	{−01 / −04}	$z^3P_1{}^\circ - g^5D_1$ / $b^3D_1 - u^5D_0{}^\circ$
J	5598.303	4	IV?	17857.61	−05	$y^3F_2{}^\circ - f^3F_2$
U	5594.670	(2)		17869.21	−04	$y^3F_4{}^\circ - e^3H_4$
U	5587.576	(1)		17891.89	+02	$c^3F_3 - v^3F_4{}^\circ$
B	5586.763	40	IV	17894.50	00	$z^5F_4{}^\circ - e^5D_3$
U	5584.766	(1)		17900.90	+03	$a^1H_5 - u^5D_4{}^\circ$
J	5576.097	10	IV	17928.73	+01	$z^5F_1{}^\circ - e^5D_0$
U	5573.105	(1)		17938.35	−02	$y^5D_2{}^\circ - e^3D_2$
B	5572.849	30	IV	17939.17	−01	$z^5F_3{}^\circ - e^5D_2$
B	5569.625	20	IV	17949.56	00	$z^5F_2{}^\circ - e^3D_1$
U	5568.81	(1)		17952.18	+13	$b^3D_1 - w^3D_1{}^\circ?$
U	5567.403	(2)		17956.72	−02	$b^3F_2 - y^3D_1{}^\circ$
I	5565.708	4	V	17962.19	−01	$y^3F_3{}^\circ - f^3F_3$
I	5563.604	3	V	17968.98	00	$y^5D_2{}^\circ - g^5D_3$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Observed	o−c	Desig
V	*5562.712	(2)		17971.86	−04 / −07	$z^3G_4^\circ - e^3G_5$ / $a^3D_1 - w^5F_1^\circ$
V	5560.230	(1)		17979.89	−07	$z^3G_4^\circ - f^3D_3$
U	5557.962	(1)		17987.22	+05	$z^3G_3^\circ - e^3G_4$
I	5554.895	4	V	17997.16	−03	$y^3F_4^\circ - f^3F_4$
V	5553.586	(1)		18001.40	−03	$z^3G_3^\circ - f^5G_4$
U	5549.94	(2)		18013.22	00	$b^1G_4 - x^3G_4^\circ$
W	5547.00	(2)		18022.77	−04	$y^5D_1^\circ - e^3D_1$
U	5546.486	(1)		18024.44	+05	$z^5G_4^\circ - f^5G_5$
J	5543.930	(2)		18032.75	+06	$y^5D_1^\circ - g^5D_2$
V	5543.184	(2)		18035.18	−12	$b^1G_4 - x^3G_3^\circ$
U	5539.831	(1)		18046.09	−02	$b^1D_2 - t^3D_2^\circ$
U	5539.27	(1)		18047.92	+06	$b^3D_3 - 1_2^\circ$
V	*5538.54	(1)		18050.30	−02 / −05	$y^5D_1^\circ - e^5P_2$ / $a^1I_6 - w^5G_6^\circ$
W	5737.71?	(1)		18053.00	+09	$y^5D_4^\circ - e^7F_3$
J	*5535.419	(2)		18060.48	+03 / +01	$a^3D_3 - w^5F_2^\circ$ / $c^3F_2 - u^3G_3^\circ$
U	*5534.64	(1)		18063.02	00 / +08	$y^5D_3^\circ - e^7S_3$ / $b^3D_2 - 1_2^\circ$
U	5532.742	(1)		18069.21	−02	$a^1H_5 - x^3F_4^\circ$
U	5531.949	(1)		18071.80	+04	$x^5D_4^\circ - i^5D_4$
U	5529.13	(2)		18081.02	+11	$b^3D_3 - z^1G_4^\circ$
V	5525.552	(3)		18092.73	+02 / −24	$y^5D_0^\circ - g^5D_1$ / $(z^3P_2^\circ - e^3D_1)$
SS	5524.273	(1)		18096.92	−08	$y^5D_3^\circ - f^5F_3$
V	5522.46	(2)		18102.86	00	$z^3P_2^\circ - g^5D_2$
SS	5521.141	(1)		18107.18	−01	$a^1I_6 - w^5G_6^\circ$
W	5517.08	(1n)		18120.51	+02	$z^3P_2^\circ - e^5P_3$
V	5512.277	(1)		18136.30	−07	$z^5G_4^\circ - g^5F_4$
B	5506.782	18	IB	18154.40	00	$a^5F_2 - z^5D_3^\circ$
T	5505.893	(−)		18157.33	−04	$z^5G_3^\circ - f^5G_4$
B	5501.469	12	IB	18171.93	00	$a^5F_3 - z^5D_4^\circ$
B	5497.519	15	IB	18184.98	00	$a^5F_1 - z^5D_2^\circ$
U	5494.462	(1)		18195.10	+01	$c^3F_4 - x^3H_5^\circ$
T	*5493.850	(0)		18197.13	−07 / +17	$y^5D_1^\circ - g^5D_1$ / $c^3P_2 - x^5P_3^\circ$
U	5493.511	(1)		18198.25	−06	$y^5D_4^\circ - e^3D_3$
W	5491.84	(2)		18203.79	−02	$c^3F_2 - u^3D_3^\circ$
K	5487.747	(8)		18217.37	+08	$c^3F_3 - t^5D_2^\circ$
U	5487.144	(1)		18219.37	+06	$z^5G_3^\circ - g^5F_3$
U	5483.116	(1)		18232.75	−07	$y^5D_3^\circ - e^3D_2$
T	5481.451	(3)		18238.29	−05	$y^5D_2^\circ - e^3D_1$
U	5481.256	(2)		18238.94	−04	$y^5D_4^\circ - e^7G_4$
U	5480.873	(2)		18240.21	+01	$y^5D_1^\circ - g^5D_0$
U	5478.463	(1)		18248.24	+02	$y^5D_2^\circ - g^5D_2$
J	5476.571	10	IV	18254.54	00	$y^5D_4^\circ - g^5D_4$
J	5476.298	(2)		18255.45	+01	$c^3F_3 - u^3G_4^\circ$
J	5473.908	(3)		18263.42	−01	$y^5D_3^\circ - g^5D_3$
U	5472.729	(1)		18267.36	−01	$z^3P_2^\circ - g^5D_1$
W	5470.17	(1)		18275.90	−16	$z^5G_2^\circ - h^5D_1$
V	*5466.993	(1)		18286.52	+02 / −04	$z^5P_2^\circ - e^5F_3$ / $a^1H_5 - z^3H_4^\circ$
J	5466.404	(3)		18288.49	−05	$z^5G_4^\circ - h^5D_3$
W	5465.1	(1)		18292.9	−2	$a^1I_6 - v^5F_5^\circ$
V	5464.286	(1)		18295.58	+03	$c^3F_3 - y^1D_2^\circ$
J	5463.282	10n	V	18298.94	−04	$z^3G_1^\circ - e^3G_4$
J	5462.970	(2)		18299.99	−05	$z^3G_3^\circ - e^3G_3$
U	5461.553	(1n)		18304.73	−03	$z^5G_2^\circ - f^5G_3$
U	5460.909	(1)		18306.90	−09	$c^3P_1 - x^5P_1^\circ$
U	5456.468	(1)		18321.80	+17	$z^5P_3^\circ - e^5F_4$
B	5455.613	40	IB	18324.67	00	$a^5F_1 - z^5D_1^\circ$
K	5455.433	(5)		18325.27	+04	$z^5G_6^\circ - f^5G_6$
U	5452.119	(1)		18336.41	−10	$b^3D_2 - w^5G_3^\circ$
B	5446.920	40	IB	18353.91	00 / −16	$a^5F_2 - z^5D_2^\circ$ / $(a^5F_2 - z^3D_3^\circ)$
J	5445.045	15n	V	18360.23	−02	$z^3G_5^\circ - e^3G_5$
U	5441.321	(1)		18372.80	+12	$z^5G_5^\circ - h^5D_4$
V	5436.594	(2)		18388.77	−01	$a^3P_2 - y^5P_3^\circ$
U	5436.299	(1)		18389.77	−01	$z^3G_5^\circ - f^5G_4$
B	5434.527	30	IB	18395.77	00	$a^5F_1 - z^5D_0^\circ$
U	5432.950	(2n)		18401.11	+01	$z^5G_2^\circ - g^5F_3$
B	5429.699	40	IB	18412.12	00	$a^5F_3 - z^5D_3^\circ$
I	5424.072	45n	V	18431.22	00	$z^5G_6^\circ - e^5H_7$
U	5417.045	(1)		18455.13	−04	$z^5G_3^\circ - f^3D_2$
U	5415.201	35n	V	18461.42	−02	$z^3G_5^\circ - e^3H_6$
I	5410.913	15n	V	18476.05	00	$z^3G_5^\circ - e^3H_4$
I	5409.125	(1)		18482.15	+01	$z^5G_4^\circ - e^3G_5$
B	5405.778	40	IB	18493.60	00	$a^5F_2 - z^5D_1^\circ$
I	5404.144	30n	V	18499.19	+02 / −10	$z^3G_4^\circ - e^3H_5$ / $(z^5G_5^\circ - f^5G_5)$
U	5403.819	(1)		18500.30	+02	$c^3F_4 - u^3G_5^\circ$
J	5400.509	(5)		18511.64	−04	$z^5G_4^\circ - f^5G_4$
U	5398.280	(1)		18519.28	−02	$z^5G_2^\circ - f^5G_2$
U	5397.616	(1)		18521.56	−02	$a^1I_6 - x^3G_5^\circ$
B	5397.131	40	IB	18523.23	00	$a^5F_4 - z^5D_4^\circ$
W	5395.25	(1n)		18529.69	−05	$z^5G_2^\circ - g^5F_1$
T	5394.682	(−)		18531.63	00	$c^3F_2 - u^3D_2^\circ$
I	5393.174	10	IV	18536.82	00	$z^5D_3^\circ - e^5D_4$
I	5391.470	(1)		18542.67	−01	$y^5D_3^\circ - g^5D_2$
U	5389.461	(5)		18549.59	+06	$z^5G_3^\circ - f^5G_3$
R	5387.51	3		18556.30	−06	$c^3F_3 - u^3D_3^\circ$
T	5386.958	(1)		18558.20	+02	$b^3D_3 - v^5F_4^\circ$
V	5386.341	(1)		18560.33	+02	$y^5D_3^\circ - e^5P_2$
I	5383.374	35n	V	18570.56	−01	$z^5G_5^\circ - e^5H_6$
T	5382.750	(−)		18572.72	+08	$a^1D_2 - u^5D_1^\circ$
J	5379.580	(2)		18583.66	−01	$b^1G_4 - z^1H_5^\circ$
U	5376.849	(2)		18593.10	−02	$b^1D_2 - z^1P_1^\circ$
V	5373.704	(1)		18603.98	−01	$z^3G_3^\circ - f^3F_4$
B	5371.493	50	IB	18611.64	00 / −21	$a^5F_3 - z^5D_2^\circ$ / $(z^3G_4^\circ - e^3G_3)$
I	5369.965	25n	V	18616.93	−03	$z^5G_4^\circ - e^5H_5$
I	5367.470	20n	V	18625.59	+04	$z^5G_5^\circ - e^5H_4$
J	5365.403	3	V	18632.76	−03	$a^1H_5 - z^1G_4^\circ$
I	5364.874	15n	V	18634.60	−06	$z^5G_2^\circ - e^5H_3$
U	5361.637	(1)		18645.85	−02	$z^5G_3^\circ - g^5F_2$
U	5353.389	(2)		18674.58	−04	$y^5D_4^\circ - g^5D_3$
T	5349.742	(3)		18687.31	−02	$z^3G_5^\circ - e^3G_4$
B	5341.026	20	II	18717.80	00	$a^3F_2 - z^3D_2^\circ$
V	5339.935	12	V	18721.63	00	$z^5D_2^\circ - e^5D_3$
J	5332.903	4	IB?	18746.31	−01	$a^3F_3 - z^3F_4^\circ$
U	5332.681	(1)		18747.09	−04	$c^3F_2 - u^3D_1^\circ$
J	5329.994	(2)		18756.54	−01	$c^3F_4 - 6_8^\circ$
B	5328.534	15	II	18761.68	−01	$a^3F_3 - z^3D_3^\circ$
I	5328.042	50	IB	18763.42	00	$a^3F_4 - z^3D_3^\circ$
T	5326.793	(−)		18767.82	+03	$z^5G_3^\circ - e^3G_3$
V	*5326.154	(1)		18770.07	−02 / −07	$a^1H_5 - w^5G_4^\circ$ / $b^3G_3 - z^3H_4^\circ?$
I	5324.185	30	IV	18777.01	00	$z^5D_4^\circ - e^5D_4$
SS	5323.510	(1)		18779.39	+01	$a^3P_2 - y^5P_2^\circ$
U	5322.054	(2)		18784.53	−03	$a^3P_3 - y^3F_3^\circ$
V	5321.106	(1)		18787.87	+01	$z^3G_4^\circ - e^3H_4$
U	5320.046	(1)		18791.62	−01	$b^3D_3 - v^5P_2^\circ$
V	5317.394	(1)		18800.99	+17	$b^3H_4 - y^3G_4^\circ$
U	5315.080	(1)		18809.17	−06	$z^5G_4^\circ - e^3G_4$
T	5313.839	(−)		18813.57	−12	$d^3F_2 - w^1D_2^\circ$
B	5307.365	2	III?	18836.52	00	$a^3F_2 - z^3F_3^\circ$
W	5304.1	(1)		18848.1	0	$z^3D_2^\circ - f^5D_3$
I	5302.307	10	V	18854.48	−01	$z^5D_1^\circ - e^5D_2$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Observed	o—c	Desig
U	5298.779	(1)		18867.04	00	$b^3D_3 - v^5F_2^\circ$
U	5295.316	(1)		18879.38	+05	$z^5G_3^\circ - e^5H_3$
T	5294.555	(—)		18882.09	—03	$b^3D_2 - v^5F_2^\circ$
U	5293.965	(1)		18884.19	+01	$c^3F_3 - u^3D_2^\circ$
U	5288.537	(2)		18903.58	—03	$b^1G_4 - y^1G_4^\circ$
W	5285.6	(1)		18914.1	0	$z^3F_2^\circ - f^7D_1$
T	5284.416	(—)		18918.32	+03	$a^1I_6 - w^3G_5^\circ$
I	5283.628	18	IV	18921.14	00	$z^5D_3^\circ - e^5D_3$
I	5281.796	10	IV	18927.70	00	$z^7P_2^\circ - e^7D_3$
V	5280.364	(1)		18932.83	—02	$b^3D_3 - x^3P_2^\circ$
W	5277.6	(1)		18942.7	—1	$z^3D_1^\circ - f^5D_1$
U	5275.021	(1n)		18952.01	—11	$c^3F_4 - u^3G_3^\circ$
J	5273.379	4	IV	18957.91	+01	$a^3P_0 - y^3D_1^\circ$
K	5273.176	(5)		18958.64	—02	$z^5D_0^\circ - e^5D_1$
B	5270.360	30	II	18968.77	—01	$a^3F_2 - z^3D_1^\circ$
I	5269.541	60	IB	18971.72	00	$a^5F_5 - z^5D_4^\circ$
I	5266.562	30	IV	18982.45	00	$z^7P_3^\circ - e^7D_4$
U	5263.870	(1)		18992.16	—04	$a^1H_5 - x^3G_4^\circ$
J	5263.314	8	V	18994.16	—01	$z^5D_2^\circ - e^5D_2$
V	5254.956	1	IA	19024.37	{—01 / +04}	$a^5D_1 - z^7D_2^\circ$ / $(b^1D_2 - y^1F_3^\circ)$
V	5253.479	(2)		19029.72	—04	$z^5D_1^\circ - e^5D_1$
B	5250.650	6	IV	19039.98	00	$a^5P_2 - y^5P_3^\circ$
U	5250.211	1	IA	19041.57	—01	$a^5D_0 - z^7D_1^\circ$
U	5249.099	(1n)		19045.60	+02	$z^3G_3^\circ - f^3F_3$
U	5247.065	1	IA	19052.98	—06	$a^5D_2 - z^7D_3^\circ$
U	5243.789	(1)		19064.89	—05	$y^5F_3^\circ - g^5F_4$
B	5242.495	4	IV	19069.59	00	$a^1I_6 - z^1H_5^\circ$
SS	5241.931	(1)		19071.65	—09	$z^5G_3^\circ - f^3F_4$
U	5236.204	(1)		19092.50	—01	$c^3F_2 - 8_1^\circ$
V	*5235.392	(2)		19095.47	{+11 / +01}	$b^3F_3 - x^5D_3^\circ$ / $c^3F_4 - u^3D_3^\circ$
I	5232.946	40	III	19104.39	00	$z^7P_4^\circ - e^7D_5$
U	5231.41	(1)		19110.00	—06	$a^1H_5 - v^5F_4^\circ$
J	*5229.857	5n	V	19115.67	{—02 / +08}	$z^5D_1^\circ - e^5D_0$ / $y^5F_4^\circ - h^5D_4$
U	5228.391	(1n)		19121.03	+04	$y^5F_4^\circ - f^5P_3$
B	5227.192	40	II	19125.42	{00 / —15}	$a^3F_3 - z^3D_2^\circ$ / $(a^3P_1 - y^3D_2^\circ)$
J	5226.868	15	IV	19126.61	00	$z^7P_2^\circ - e^7D_2$
SS	5226.063	(1)		19129.55	—02	$a^1P_1 - y^3P_0^\circ$
U	5225.531	1	IA	19131.50	—02	$a^5D_1 - z^7D_1^\circ$
U	5223.193	(1)		19140.06	—01	$b^3D_1 - x^3P_0^\circ$
W	5221.8	(1)		19145.2	—1	$a^3D_1 - x^3D_1^\circ$?
T	5217.927	(2)		19159.38	+01	$b^3D_2 - x^3P_1^\circ$
J	5217.395	5	V	19161.33	00	$z^5D_4^\circ - e^5D_3$
B	5216.278	10	II	19165.44	00	$a^3F_2 - z^3F_2^\circ$
J	5215.185	6	IV	19169.45	00	$z^5D_2^\circ - e^5D_1$
J	5208.601	7	IV	19193.68	—01	$z^5D_3^\circ - e^5D_2$
SS	5207.937	(1)		19196.13	+03	$b^3D_1 - x^3P_1^\circ$
J	**5204.582	2	IA	19208.51	00	$a^5D_2 - z^7D_2^\circ$
B	5202.339	8	IV	19216.79	00	$a^5P_3 - y^5P_3^\circ$
W	5202.27?	(1)		19217.04	—07	$y^5F_3^\circ - h^5D_3$
V	5198.843	(1)		19229.71	+06	$a^1D_2 - x^3G_2^\circ$
B	5198.714	4	IV	19230.19	+01	$a^5P_1 - y^5P_2^\circ$
V	5196.100	(2w)		19239.86	—08	$y^5F_2^\circ - f^5P_2$
K	5195.471	(8)		19242.19	—01	$y^5F_4^\circ - f^5G_5$
I	5194.943	10	IB	19244.15	+01	$a^3F_3 - z^3F_3^\circ$
I	5192.350	30	IV	19253.76	00	$z^7P_3^\circ - e^7D_3$
J	5191.460	20	IV	19257.06	+01	$z^7P_2^\circ - e^7D_1$
U	5187.924	(2)		19270.18	+03	$c^3F_3 - t^3D_2^\circ$
U	5184.292	(3n)		19283.68	—04	$y^5F_2^\circ - g^5F_3$
T	5180.065	(—)		19299.42	—03	$z^3G_3^\circ - f^3F_2$
U	5178.798	(1n)		19304.14	—01	$z^3G_5^\circ - f^3F_4$
T	5177.230	(—)		19309.99	+01	$b^1G_4 - w^3F_4^\circ$
B	5171.599	20	II	19331.01	00	$a^3F_4 - z^3F_4^\circ$
B	5168.901	4	IA	19341.10	—01	$a^5D_3 - z^7D_3^\circ$
B	5167.491	40	II	19346.38	00	$a^3F_4 - z^3D_3^\circ$
J	5166.286	4	IA	19350.89	00	$a^5D_4 - z^7D_5^\circ$
J	5165.422	(4)		19354.13	—05	$y^5F_4^\circ - g^5F_4$
S	5164.922	(—)		19356.00	00	$c^3F_3 - w^3H_4^\circ$
W	5164.56	(1)		19357.36	00	•$z^3G_4^\circ - f^3F_3$
J	5162.288	10n	IV?	19365.88	{+02 / +36}	$y^5F_5^\circ - g^5F_5$ / $(b^3F_2 - x^5D_1^\circ)$
V	5159.066	(2w)		19377.97	—05	$y^5F_2^\circ - f^5P_1$
J	5151.915	4	IB	19404.87	00	$a^5F_1 - z^5F_2^\circ$
B	5150.843	6	IB	19408.91	00	$a^5F_2 - z^5F_3^\circ$
U	5148.234	(3)		19418.74	—03	$y^5F_3^\circ - f^3D_3$
V	5148.061	(3)		19419.40	—08	$y^5F_2^\circ - h^5D_2$
T	5145.105	(—)		19430.55	—03	$a^5P_2 - y^5P_3^\circ$
J	5142.932	6	IB	19438.76	—01	$a^5F_3 - z^5F_4^\circ$
J	*5142.541	(3w)		19440.24	{00 / —07}	$y^5F_3^\circ - f^5G_4$ / $y^5F_1^\circ - h^5D_1$
U	5141.747	(2)		19443.24	—03	$a^3P_1 - y^3D_1^\circ$
J	5139.468	20	IV	19451.86	00	$z^7P_4^\circ - e^7D_4$
J	5139.260	10	IV	19452.65	—01	$z^7P_3^\circ - e^7D_2$
J	5137.388	6n	V	19459.74	+03	$y^5F_5^\circ - h^5D_4$
W	5136.09	(1)		19464.66	+05	$c^3F_2 - z^1P_1^\circ$
J	5133.692	20n	V	19473.75	—04	$y^5F_5^\circ - f^5G_6$
J	5131.475	(2)		19482.16	00	$a^5P_1 - y^5P_1^\circ$
T	5129.658	(1)		19489.06	—10	$z^3F_3^\circ - e^3D_3$
B	5127.363	5	IB	19497.79	00	$a^5F_4 - z^5F_5^\circ$
U	5126.598	(1)		19500.70	—08	$z^3F_4^\circ - f^7D_4$
T	5126.218	(1)		19502.14	—04	$y^5F_3^\circ - g^5F_3$
J	5125.130	6n	V	19506.28	—06	$y^5F_4^\circ - h^5D_3$
W	5124.1	(1)		19510.2	+3	$c^3F_2 - s^3D_2^\circ$
B	5123.723	6	IB	19511.64	00	$a^5F_1 - z^5F_1^\circ$
U	5121.636	(2n)		19519.59	00	$y^5F_2^\circ - f^3D_2$
T	5115.788	(1)		19541.90	—04	$a^1H_5 - w^3G_4^\circ$
B	5110.414	10	IB	19562.45	{—01 / —20}	$a^5D_4 - z^7D_4^\circ$ / $(a^1H_5 - z^1H_5^\circ)$
U	5109.646	(2)		19565.39	+04	$y^5F_1^\circ - g^5F_2$
J	5107.645	8	II	19573.06	00	$a^5F_2 - z^5F_2^\circ$
J	5107.452	6	IB	19573.79	—01	$a^5F_2 - z^5F_2^\circ$
SS	5104.441	(1)		19585.34	+10	$y^5F_2^\circ - h^5D_1$
U	5104.21	(1)		19586.23	—09	$y^5F_5^\circ - f^5G_5$
T	5104.038	(—)		19586.89	—01	$c^3P_2 - w^5D_3^\circ$
T	5099.091	(1)		19605.89	—06	$z^3F_2^\circ - e^3D_2$
J	5098.703	8	IV	19607.38	00	$a^5P_3 - y^5P_2^\circ$
K	5098.594	(3)		19607.80	—08	$z^3D_2^\circ - e^3D_3$
J	5096.998	(6)		19613.94	—01	$y^5F_2^\circ - f^5G_3$
K	5090.787	(6n)		19637.87	—07	$y^5F_3^\circ - h^5D_2$
SS	5088.159	(1)		19648.02	+03	$y^5D_3^\circ - h^5D_4$
B	5083.342	7	IB	19666.63	00	$a^5F_3 - z^5F_3^\circ$
J	5079.742	4	IB	19680.57	00	$a^5F_2 - z^5F_1^\circ$
J	5079.226	6	IV	19682.57	+01	$a^5P_2 - y^5P_1^\circ$
U	5078.983	(1n)		19683.51	—04	$y^5F_1^\circ - f^5G_2$
T	5076.288	(2)		19693.96	—03	$y^5F_1^\circ - g^5F_1$
J	5074.757	10n	V	19699.90	—05	$y^5F_4^\circ - e^3G_5$
T	5072.690	(1)		19707.93	—08	$y^5F_4^\circ - f^3D_3$
K	5072.077	(1)		19710.31	+03	$y^5F_2^\circ - g^5F_2$
J	5068.774	10	V	19723.15	—02	$z^7P_4^\circ - e^7D_3$
V	5067.162	(1)		19729.43	—05	$y^5F_4^\circ - f^5G_4$
U	5065.213	(2)		19737.02	—06	$b^3D_3 - w^3F_4^\circ$
J	5065.020	6n	V	19737.77	—02	$y^5F_3^\circ - e^3G_4$
T	5063.296	(—)		19744.49	+20	$y^5D_2^\circ - h^5D_3$
T	*5060.079	(1)		19757.05	{+01 / —11}	$a^5D_4 - z^7D_3^\circ$ / $y^5F_1^\circ - f^3D_1$
U	5058.507	(1)		19763.18	—04	$b^3D_3 - v^3D_3^\circ$
W	5058.00	(1)		19765.16	+10	$z^3F_3^\circ - e^7S_3$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Observed	o−c	Desig	Ref	λ I A	Int	T C	Observed	o−c	Desig
W	*5057.49	(1)		19767.16	+04 / −03	$y^5D_2^\circ - f^5P_2$ / $z^5G_3^\circ - f^3F_2$	V	*4952.646	(1n)		20185.61	−16 / +09	$y^5D_4^\circ - f^5G_5$ / $z^3P_3^\circ - h^5D_1$
U	5056.856	(1)		19769.64	+05	$z^3P_1^\circ - h^5D_1$	J	4950.112	(2)		20195.94	00	$z^5F_2^\circ - e^5F_3$
U	5056.023	(1)	.	19772.89	−11	$z^5G_6^\circ - e^3H_4$	J	4946.394	4	IV	20211.12	−01	$z^3F_4^\circ - e^5F_4$
T	5054.647	1		19778.28	−02	$b^3D_2 - v^3D_3^\circ$	U	4945.63	(1)		20214.25	+03	$z^3P_2^\circ - f^5G_3$
B	5051.636	10	IB	19790.07	+01	$a^5F_4 - z^5F_4^\circ$	B	4939.690	4	IB	20238.55	−01	$a^5F_5 - z^5F_4^\circ$
B	5049.825	15	III	19797.16	−01	$a^3P_2 - y^3D_3^\circ$	J	*4939.244	(2)		20240.38	−02 / −01	$y^5D_3^\circ - f^3D_3$ / $y^5D_1^\circ - g^5F_2$
U	5048.457	(2)		19802.53	−08	$z^3D_1^\circ - e^3D_2$	J	4938.820	10	IV	20242.12	00	$z^7F_2^\circ - e^7D_3$
T	5044.221	(2)		19819.16	−01	$z^7F_4^\circ - e^7D_5$	K	4938.183	(2)		20244.73	+01	$z^3F_3^\circ - g^5D_2$
B	5041.759	10	III	19828.83	−01	$a^3F_4 - z^3F_3^\circ$	Q	4934.023	(2n)		20261.80	−08	$y^5D_3^\circ - f^5G_4$
J	5041.074	7	IB	19831.53	00	$a^5F_3 - z^5F_2^\circ$	K	4933.878	(1)		20262.39	+04	$z^3F_3^\circ - e^5F_2$
V	*5040.902	(2)		19832.20	00 / −21	$y^5F_2^\circ - e^5G_3$ / $y^5F_3^\circ - f^5G_3$	K	4933.348	(2n)		20264.57	+03	$y^5D_0^\circ - g^5F_1$
U	5039.261	(2)		19838.66	−01	$z^5F_4^\circ - e^5F_5$	K	4930.331	(2)		20276.97	−01	$z^3D_1^\circ - g^5D_1$
R	§5036.931	2		19847.84	00	$c^3P_2 - w^5D_2^\circ$	U	4927.447	(1)		20288.84	−12	$a^1H_5 - w^3F_4^\circ$
R	5035.025	3		19855.35	+05	$b^3D_3 - 3_3^\circ$	U	4925.293	(1)		20297.71	−04	$y^5D_4^\circ - g^5F_4$
R	5031.901	8		19867.68	+05	$z^5G_4^\circ - f^3F_3$	B	4924.776	3	V	20299.84	−01	$a^3P_2 - y^3D_2^\circ$
R	*5031.030	2		19871.12	−01 / +03	$a^1D_2 - w^3G_3^\circ$ / $b^3D_3 - w^3F_3^\circ$	I	4920.509	60	III	20317.45	00	$z^7F_6^\circ - e^7D_4$
R	§5030.784	5		19872.09	00	$b^3H_6 - z^3I_7^\circ$	B	4918.999	30	III	20323.68	00	$z^7F_5^\circ - e^7D_3$
V	5029.623	(1)		19876.68	−04	$a^1P_1 - 1_2^\circ$	U	4918.023	(1)		20327.72	+01	$y^5D_0^\circ - f^3D_1$
J	5028.129	4	V	19882.58	−01	$a^1H_5 - y^1G_4^\circ$	U	4917.242	(1)		20330.95	+07	$y^5D_2^\circ - h^5D_1$
T	5027.785	(−)		19883.95	−05	$z^3P_2^\circ - g^5F_3$	U	4911.786	(1)		20353.53	−03	$z^3D_2^\circ - e^3D_1$
V	5027.212	(1)		19886.21	+04	$b^3D_2 - w^3F_3^\circ$	J	4910.570	(1w)		20358.57	−02	$y^5D_1^\circ - f^5G_2$
J	5027.136	5n	V	19886.51	−06	$y^5D_3^\circ - g^5F_4$	J	4910.328	(1w)		20359.57	−02	$y^5D_2^\circ - f^5G_3$
T	5023.476	(−)		19901.00	+06	$z^5G_5^\circ - f^5F_4$	J	4910.027	(2)		20360.82	−02	$z^5F_3^\circ - c^5F_3$
T	5023.226	(−)		19901.99	−10	$y^5F_2^\circ - f^3D_1$	J	4909.387	(1)		20363.47	+03	$z^3D_2^\circ - g^5D_2$
J	5022.244	6	V	19905.88	−04	$z^3F_2^\circ - e^3D_1$	K	4907.743	(1)		20370.29	−01	$z^5F_1^\circ - e^5F_2$
V	5021.894	(1)		19907.27	+15	$a^3D_1 - w^5P_2^\circ$	W	4905.15	(1)		20381.06	−01	$z^3D_2^\circ - e^5P_2$
U	5020.819	(1)		19911.53	−01	$a^1D_2 - x^3P_1^\circ$	B	4903.317	12	III	20388.68	−01	$z^7F_1^\circ - e^7D_2$
J	5014.950	10	V	19934.83	−04	$y^5D_3^\circ - g^5F_5$	U	4896.437	(1)		20417.33	+01	$z^3D_3^\circ - e^3D_2$
B	5012.071	12	IB	19946.28	00	$a^5F_5 - z^5F_5^\circ$	U	4892.866	(1)		20432.23	+03	$y^5D_1^\circ - f^3D_1$
J	*5007.289	(3n)		19965.33	−15 / +01	$z^3F_3^\circ - g^5D_3$ / $y^5D_4^\circ - g^5F_5$	I	4891.496	50	III	20437.95	00	$z^7F_4^\circ - e^7D_3$
I	5006.126	20	III	19969.97	−01	$z^7F_5^\circ - e^7D_5$	J	4890.762	25	III	20441.02	−01	$z^7F_2^\circ - e^7D_2$
J	5005.720	10	V	19971.59	−03	$z^3D_3^\circ - e^3D_3$	U	4889.113	(2)		20447.91	−03	$z^3D_3^\circ - g^5D_3$
T	5004.034	(1)		19978.32	+02	$z^3P_2^\circ - f^5P_1$	U	*4889.009	(1)		20448.35	−01 / +03	$a^5P_2 - y^3D_3^\circ$ / $a^1D_2 - 2_2^\circ$
J	5002.800	(6)		19983.25	−01	$z^5F_4^\circ - e^5F_4$	V	4888.651	(1)		20449.85	−08	$y^5D_4^\circ - h^5D_3$
B	5001.871	12	V	19986.96	−03	$z^3F_4^\circ - e^3D_3$	K	4887.189	(−)		20455.96	+04	$y^5D_2^\circ - g^5F_2$
T	4999.114	(1)		19997.98	+03	$c^3F_2 - x^1F_3^\circ$	J	4886.335	(1)		20459.54	−04	$y^5D_3^\circ - h^5D_3$
B	4994.133	8	IB	20017.93	00	$a^5F_4 - z^5F_3^\circ$	J	4885.435	2	V	20463.31	+01	$z^3F_4^\circ - g^5D_3$
U	4993.687	(1)		20019.72	−04	$z^3P_2^\circ - h^5D_2$	J	4882.151	(2)		20477.07	00	$z^5F_2^\circ - e^5F_2$
J	4991.277	(3)		20029.38	+02	$y^5D_2^\circ - g^5F_3$	J	*4881.726	(2)		20478.85	−05 / +09	$b^3H_4 - z^3H_4^\circ$ / $c^3F_3 - 10_3^\circ$
J	4988.963	(6)		20038.67	−07	$y^5D_3^\circ - h^5D_3$	B	4878.218	12	III	20493.58	−01	$z^7F_0^\circ - e^7D_1$
U	4986.223	(1)		20049.68	−01	$y^5D_1^\circ - f^3D_2$	U	4875.897	(1)		20503.34	−06	$z^5F_4^\circ - e^5F_4$
J	4985.553	7	V	20052.38	00	$z^7F_3^\circ - e^7D_4$	I	4872.144	20	III	20519.13	−01	$z^7F_1^\circ - e^7D_1$
J	4985.261	7	V	20053.55	−04	$z^3D_2^\circ - e^3D_2$	I	4871.323	25	III	20522.59	00	$z^7F_3^\circ - e^7D_2$
J	4983.855	6n	V	20059.21	+04	$y^5D_4^\circ - h^5D_4$	J	4863.653	(2)		20554.95	−01	$z^5F_1^\circ - e^5F_1$
J	4983.258	5n	V	20061.61	+03	$y^5D_3^\circ - f^5P_2$	SS	4860.994	(1)		20566.20	−07	$z^5F_3^\circ - e^3F_4$
J	4982.507	8n	V	20064.64	+07	$y^5D_4^\circ - f^5P_3$	B	4859.748	15	III	20571.47	00	$z^7F_2^\circ - e^7D_1$
U	4979.586	(1)		20076.41	+01	$b^3D_2 - w^5F_2^\circ$	U	4859.142	(1)		20574.04	−08	$y^5D_2^\circ - f^5G_2$
J	4978.606	2	V	20080.36	+04	$z^3F_2^\circ - g^5D_1$	U	4855.683	(3)		20588.69	−01	$z^5F_4^\circ - e^5F_3$
U	4977.653	(1)		20084.20	00	$z^3D_2^\circ - g^5D_3$	U	4854.888	(1n)		20592.06	+02	$c^3F_3 - 11_3^\circ$
U	4975.415	(1)		20093.24	+03	$b^3H_4 - u^5D_4^\circ$	U	4848.885	(1)		20617.55	00	$a^3P_2 - y^3D_1^\circ$
J	4973.108	3	V	20102.56	−03	$z^3D_1^\circ - e^3D_1$	V	*4845.656	(2)		20631.29	00 / −02	$b^3H_5 - z^3H_6^\circ$ / $b^3D_1 - w^3P_0^\circ$
SS	4972.398	(1)		20105.43	−05	$y^5F_5^\circ - g^7D_5$	U	4844.004	(2)		20638.33	−01	$a^1D_2 - w^3F_3^\circ$
U	4970.493	(2)		20113.13	00	$b^3D_1 - w^3F_2^\circ$	J	4843.155	(3)		20641.95	−01	$z^5F_2^\circ - e^5F_2$
J	4969.927	(3)		20115.42	+07	$y^5D_1^\circ - h^5D_1$	U	4842.788	(1)		20643.51	−02	$y^5D_4^\circ - e^3G_5$
U	4968.702	(1)		20120.38	+06	$b^3D_2 - z^1D_2^\circ$	W	4841.80	(1)		20647.72	−01	$y^5D_2^\circ - f^3D_1$
J	4967.899	(3)		20123.64	−02	$y^5D_2^\circ - f^5P_1$	U	4840.319	(1n)		20654.04	00	$y^5D_3^\circ - f^5G_3$
B	4966.096	8	V	20130.94	−01	$z^7F_5^\circ - e^7F_6$	J	4839.549	(3)		20657.34	00	$b^3H_5 - z^3H_5^\circ$
U	4962.564	(1)		20145.27	+01	$y^5F_5^\circ - e^3H_6$	J	4838.519	(2n)		20661.72	00	$z^5F_2^\circ - e^5F_1$
U	4961.908	(1)		20147.93	+05	$a^1I_5 - v^3G_5^\circ$	K	4835.862	(3)		20673.08	+02	$y^5D_4^\circ - f^5G_4$
I	4957.603	60	III	20165.43	00	$z^7F_6^\circ - e^7D_5$	V	4834.511	(1)		20678.86	−01	$a^3P_1 - x^5D_2^\circ$
J	4957.302	20	III	20166.65	+01	$z^7F_4^\circ - e^7D_4$							

TABLE B—(Continued)

Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig
J	*4832.734	(2)		20686.46	$\{-01 / -21$	$b^3D_2 - w^3P_1^\circ$ / $y^5F_1^\circ - f^3F_2$
U	4824.165	(1)		20723.20	00	$b^3D_1 - w^3P_1^\circ$
U	4817.773	(1)		20750.70	+04	$a^5P_1 - y^3D_2^\circ$
U	4813.115	(1)		20770.78	+02	$a^3D_1 - u^5D_1^\circ$
V	4811.04	(1)		20779.74	−03	$c^3P_1 - x^3D_1^\circ$
U	4809.950	(1)		20784.45	−02	$a^1H_5 - y^3H_5^\circ$
W	4809.3	(1)		20787.3	−1	$c^3F_4 - y^1F_3^\circ$
U	4809.154	(1)		20787.89	−04	$b^1G_4 - z^1F_3^\circ$
U	4808.159	(1)		20792.19	−02	$a^3D_3 - w^3D_3^\circ$
K	4807.725	(2)		20794.06	−08	$z^5F_4^\circ - e^3F_4$
S	*4807.243	(−)		20796.15	$\{-05 / +16$	$y^5F_3^\circ - f^3F_3$ / $a^3D_2 - 1_2^\circ$
W	4804.6	(1)		20807.6	0	$a^1P_1 - v^5F_1^\circ$
U	4804.531	(1)		20807.89	−05	$a^1H_5 - v^3G_4^\circ$
J	*4802.883	(3)		20815.03	$\{+02 / -03$	$b^3D_3 - w^3P_2^\circ$ / $b^1G_4 - x^1G_4^\circ$
J	4800.652	(2)		20824.70	+02	$c^3F_3 - t^3G_4^\circ$
U	4800.137	(1)		20826.94	−01	$z^7P_2^\circ - e^5D_2$
U	4799.414	(1)		20830.07	−02	$b^3D_3 - w^3P_2^\circ$
U	4798.735	(1)		20833.02	00	$a^3F_2 - y^5D_2^\circ$
U	4798.271	(1)		20835.03	+01	$c^3F_2 - t^3G_3^\circ$
W	4794.0	(1)		20853.6	−2	$a^1G_4 - y^3G_4^\circ$
U	4791.248	(1)		20865.57	−04	$a^3D_1 - w^3D_1^\circ$
B	4789.654	7	V	20872.52	+03	$a^1D_2 - z^1D_2^\circ$
J	4788.757	(4)		20876.43	00	$b^3H_4 - z^3H_6^\circ$
U	4787.839	(1)		20880.43	−03	$z^7P_3^\circ - e^5D_3$
B	4786.810	5	IV?	20884.92	−01	$c^3P_2 - x^3D_3^\circ$
U	4785.959	(1)		20888.63	+05	$c^3F_3 - 13_4^\circ$
J	4779.444	(1)		20917.10	−02	$a^1P_1 - x^3P_0^\circ$
V	4776.34	(1n)		20930.70	+11	$y^5P_3^\circ - i^5D_4$
U	4776.074	(1)		20931.86	−04	$a^3D_2 - y^5S_1^\circ$
B	*4772.817	3	III	20946.15	$\{+07 / -04$	$c^3P_2 - x^3D_2^\circ$ / $a^3F_3 - y^3D_3^\circ$
J	4771.702	(1)		20951.04	−01	$a^5P_3 - y^3D_2^\circ$
V	4768.397	3n	V	20965.56	+02	$z^7P_4^\circ - c^5D_4$
V	4768.334	(1)		20965.84	−08	$z^5P_1^\circ - f^5D_2$
U	4765.482	(1)		20978.39	00	$a^3F_2 - z^3P_2^\circ$
J	*4757.582	(2)		21013.22	$\{-01 / -01$	$z^3P_1^\circ - c^3P_1$ / $a^3D_1 - 1_2^\circ$
V	4749.93	(1)		21047.07	+10	$y^5P_3^\circ - i^5D_3$
B	*4745.806	3n	V	21065.36	$\{-04 / +14$	$z^5P_2^\circ - f^5D_3$ / $y^5D_4^\circ - f^5G_3$
U	4745.129	(1)		21068.37	+02	$a^5P_1 - y^3D_1^\circ$
B	4741.533	3	V	21084.35	+01	$b^3P_2 - w^5D_3^\circ$
J	4741.081	(1)		21086.36	−05	$z^5F_3^\circ - e^3F_4$
J	4740.343	(1)		21089.64	−01	$b^3G_3 - y^3G_4^\circ$
J	4737.633	(1)		21101.70	+02	$b^3H_5 - z^1G_4^\circ$
I	4736.780	12	II?	21105.50	−01	$z^5D_4^\circ - e^5F_5$
J	4735.846	(2)		21109.67	+05	$c^3F_4 - t^3G_5^\circ$
J	4734.100	(1)		21117.45	−02	$b^1D_2 - w^1D_2^\circ$
B	4733.596	4	IB?	21119.70	00	$a^3F_4 - y^5D_4^\circ$
V	4729.699	(1)		21137.10	−09	$z^5F_3^\circ - e^3F_3$
J	4729.028	(1)		21140.10	00	$c^3F_4 - 12_5^\circ$
J	4728.555	3n	IV	21142.21	−06	$z^5P_2^\circ - e^7P_3$
J	4727.405	3n	IV	21147.36	−04	$z^5P_1^\circ - f^5D_1$
U	4726.160	(1)		21152.93	−07	$z^7P_3^\circ - e^5D_2$
U	4725.945	(1n)		21153.89	−01	$b^1D_2 - w^1F_3^\circ$
J	*4720.997	(1)		21176.06	$\{+05 / -19$	$b^3G_4 - y^3G_3^\circ$ / $y^5D_3^\circ - f^3F_4$
V	4714.182	(1n)		21206.67	+05	$b^3H_4 - x^3G_3^\circ$
V	4714.074	(1n)		21207.16	00	$y^5P_3^\circ - i^5D_2$
V	4712.104	(1)		21216.03	00	$c^3F_3 - x^3D_1^\circ$
B	4710.286	5	IV	21224.21	−01	$b^3G_3 - y^3G_2^\circ$
J	4709.092	(3)		21229.59	−04	$z^5P_2^\circ - f^5D_2$
V	4708.972	(1)		21230.14	+03	$b^3D_2 - z^1F_3^\circ$
J	4707.487	(2)		21236.83	+05	$b^3P_1 - w^5D_2^\circ$
B	4707.281	8	IV	21237.76	−01	$z^5D_3^\circ - e^5F_4$
J	4705.464	(1)		21245.96	−04	$a^1D_2 - v^3G_3^\circ$
J	4704.958	(5)		21248.25	−02	$z^5P_1^\circ - f^5D_0$
J	4701.052	(1)		21265.90	−04	$z^5P_1^\circ - f^7D_2$
J	4700.171	(2n)		21269.89	+08	$b^1G_4 - x^3H_5^\circ$
B	4691.414	6	IV	21309.59	−01	$b^3G_4 - y^3G_4^\circ$
J	4690.146	(3)		21315.35	00	$z^5P_1^\circ - f^7D_1$
J	4687.387	(1)		21327.90	+02	$b^3P_2 - w^5F_3^\circ$
J	4683.565	(2)		21345.30	+02	$b^3P_2 - w^5D_2^\circ$
U	4682.583	(1)		21349.78	−09	$z^7P_4^\circ - e^5D_3$
V	4680.475	(1)		21359.39	00	$b^3P_0 - w^3D_1^\circ$
V	4680.297	(2)		21360.21	+01	$a^3F_2 - y^5F_3^\circ$
V	4679.229	(1)		21365.08	+02	$z^5F_4^\circ - e^3F_3$
B	4678.852	7	V	21366.80	−04	$z^5P_3^\circ - f^5D_4$
J	4673.169	(4)		21392.78	−04	$z^5P_3^\circ - f^7D_3$
J	4669.174	(4)		21411.09	−03	$z^5P_2^\circ - f^5D_1$
U	4668.142	6	IV	21415.82	−01	$z^5D_2^\circ - e^5F_3$
B	4667.459	6	V	21418.96	−02	$z^5P_3^\circ - e^7P_4$
J	4663.183	(1)		21438.60	−04	$a^1D_2 - w^3P_1^\circ$
J	4661.975	(2)		21444.15	−02	$b^3G_4 - y^3G_3^\circ$
J	4661.538	(2n)		21446.16	−01	$y^5P_3^\circ - 4_2$
U	4658.29	(1)		21461.12	+03	$b^3H_5 - x^3G_4^\circ$
U	4657.596	(1)		21464.31	−01	$b^3P_1 - w^5D_1^\circ$
J	*4654.628	5	V	21478.00	$\{+04 / -09$	$z^5D_1^\circ - e^5F_4$ / $z^5P_3^\circ - f^5D_3$
J	4654.501	5	II?	21478.59	00	$a^3F_3 - y^5F_4^\circ$
U	4649.828	(1)		21500.17	+02	$b^3H_5 - v^5F_5^\circ$
B	4647.437	6	IV	21511.23	+02	$b^3G_5 - y^3G_5^\circ$
J	4643.468	(2)		21529.62	−03	$z^5P_2^\circ - f^7D_2$
J	4638.016	3	IV	21554.92	−04	$z^5P_3^\circ - e^7P_3$
J	4637.512	3	IV	21557.27	00	$z^5D_1^\circ - c^5F_2$
J	4635.846	(1)		21565.01	+01	$b^3P_1 - y^5S_2^\circ$
U	4633.764	(1)		21574.71	−02	$b^3G_4 - x^5G_3^\circ$
J	4632.915	2	III?	21578.65	−01	$a^3F_2 - y^5F_2^\circ$
U	4631.501	(1)		21585.25	−11	$z^5G_4^\circ - 3$
U	4630.785	(1)		21588.58	−04	$z^3F_3^\circ - g^5F_4$
J	4630.125	(2)		21591.66	00	$a^3P_3 - x^5D_3^\circ$
S	4626.758	(−)		21607.37	+04	$b^3G_4 - x^5G_5^\circ$
I	4625.052	3	IV	21615.35	+01	$z^5D_3^\circ - c^5F_3$
J	4619.294	3n	IV	21642.29	−03	$z^5P_3^\circ - f^5D_2$
J	4618.765	(2)		21644.77	−03	$b^3G_5 - y^3G_4^\circ$
V	4618.568	(2w)		21645.69	+08	$z^5G_4^\circ - 1$
J	4614.216	(1)		21666.10	−06	$a^3D_2 - v^5P_1^\circ$
J	4613.210	2n	V	21670.83	00	$z^5D_0^\circ - e^5F_1$
I	4611.285	5n	III	21679.88	$\{+02 / +31 / +04$	$z^5P_2^\circ - e^5S_2$ / $(a^5F_4 - z^5P_3^\circ)$ / $(z^5P_3^\circ - e^7F_3)$
J	*4607.655	3n	V	21696.95	$\{-01 / 00$	$z^5D_2^\circ - e^5F_2$ / $z^3F_2^\circ - g^5F_3$
V	4603.956	(1)		21714.39	00	$b^3G_4 - x^5G_4^\circ$
B	4602.944	9	IB?	21719.16	00	$a^3F_4 - y^5F_5^\circ$
J	4602.005	(2)		21723.59	−01	$a^3F_3 - y^5F_4^\circ$
J	4600.937	(1)		21728.64	−03	$b^3H_5 - x^3G_5^\circ$
J	4598.122	(2n)		21741.94	+01	$z^5D_1^\circ - e^5F_1$
U	4596.433	(1)		21749.93	−10	$z^5P_2^\circ - e^5G_3$
K	4596.059	(2n)		21751.70	−01	$z^5P_3^\circ - f^7D_4$
J	4595.363	(2)		21754.99	00	$b^3H_4 - z^1H_5^\circ$
J	4594.957	(2)		21756.91	−09	$a^3D_1 - v^5P_2^\circ$
U	4593.544	(1)		21763.61	−01	$z^7F_2^\circ - f^5P_2$
B	4592.655	5	IB	21767.82	00	$a^3F_3 - y^5F_3^\circ$
J	4587.132	(2)		21794.03	−01	$a^1H_5 - x^1G_4^\circ$
K	4584.824	(2)		21805.00	+02	$z^5P_3^\circ - e^7P_2$
U	4584.723	(1)		21805.48	−03	$z^5P_3^\circ - f^7D_3$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Observed	o−c	Desig
U	4582.941	(1)		21813.96	+03	$b^3P_1 - v^5D_1^\circ$
J	4581.517	(2)		21820.74	−04	$z^5D_3^\circ - e^3F_4$
K	4580.600	(2)		21825.10	−13	$z^5P_2^\circ - c^3D_3$
V	4579.825	(1)		21828.80	−02	$c^3P_1 - z^3S_1^\circ$
V	*4579.344	(1)		21831.09	−04	$z^7F_5^\circ - e^5D_4$
					−18	$b^1G_4 - 6_5^\circ$
U	*4575.80	(1)		21848.00	−10	$b^3H_4 - w^3G_3^\circ$
					+14	$z^3F_4^\circ - h^5D_4$
J	4574.724	(2)		21853.14	−01	$a^3P_2 - x^5D_2^\circ$
V	4574.240	(1)		21855.45	−09	$z^5D_4^\circ - e^5F_3$
W	4572.9	(1)		21861.9	−2	$z^5P_2^\circ - e^7F_2$
U	4568.840	(1)		21881.28	00	$b^3D_1 - v^3F_2^\circ$
U	4568.787	(1)		21881.53	−09	$z^5D_2^\circ - e^5F_1$
U	4566.988	(1)		21890.15	−03	$a^1P_1 - w^3F_2^\circ$
J	4566.520	(2)		21892.40	−02	$a^3D_2 - x^3P_1^\circ$
U	4565.667	(2)		21896.49	+02	$z^5D_3^\circ - e^5F_2$
V	4565.324	(2n)		21898.13	−09	$a^3D_1 - x^3P_2^\circ$
V	4564.832	(1)		21900.49	−02	$c^3P_1 - y^3P_0^\circ$
U	4564.713	(1)		21901.06	−09	$z^5P_2^\circ - e^5G_2$
J	4560.096	(2)		21923.24	−05	$z^5P_3^\circ - e^5G_4$
J	*4558.108	(1)		21932.80	+01	$b^3D_3 - v^3F_4^\circ$
					−01	$z^3F_2^\circ - f^3D_2$
J	4556.939	(1)		21938.43	−03	$a^3D_3 - v^5P_2^\circ$
J	*4556.129	4n	V	21942.32	−02	$z^5P_3^\circ - f^7D_2$
					−13	$z^3F_3^\circ - f^3D_3$
					−21	$b^5G_5 - x^5G_6^\circ$
U	4554.465	(1)		21950.34	−05	$z^7F_3^\circ - e^5D_3$
U	4551.667	(1)		21963.83	−09	$z^3F_3^\circ - f^5G_4$
B	4547.851	4	V	21982.26	−02	$a^1D_2 - z^1F_3^\circ$
J	4547.022	(2)		21986.27	−01	$a^3F_3 - y^5F_2^\circ$
V	4542.720	(1)		22007.09	−13	$z^5P_1^\circ - e^3D_2$
U	4542.420	(2)		22008.55	+03	$b^3D_2 - v^3F_3^\circ$
U	4541.953	(1)		22010.81	−02	$b^3H_5 - w^3G_4^\circ?$
W	4538.84	(2)		22025.91	+05	$z^3F_3^\circ - g^5F_3$
V	4538.764	(1)		22026.28	−05	$a^3P_2 - x^5D_1^\circ$
J	4537.677	(1n)		22031.55	+01	$b^3H_5 - z^1H_5^\circ$
U	4536.509	(1)		22037.22	−10	$b^3D_3 - 4_4^\circ$
V	4533.143	(1n)		22053.59	−04	$a^3D_1 - x^3P_0^\circ$
J	*4531.633	(2)		22060.93	+01	$a^1I_6 - u^3G_5^\circ$
					−04	$z^5D_4^\circ - e^3F_4$
					−24	$z^3D_2^\circ - f^3D_3$
B	4531.152	8	II	22063.28	00	$a^3F_4 - y^5F_4^\circ$
V	4529.562	(1)	II	22071.02	−06	$z^3D_3^\circ - g^5F_4$
B	4528.619	18	II	22075.62	00	$a^5P_3 - x^5D_4^\circ$
W	4527.9	(1)		22079.1	0	$b^3D_2 - 5^\circ$
U	4527.784	(1)		22079.69	+01	$a^3D_3 - x^3P_2^\circ$
J	4526.563	(2)		22085.64	+01	$c^3P_0 - u^5D_1^\circ$
U	4525.868	(1)		22089.04	+01	$z^7F_1^\circ - e^5D_2$
I	4525.142	5n	IV	22092.58	+06	$z^5P_3^\circ - e^5S_2$
					+05	$(z^5P_3^\circ - e^7F_3)$
J	4523.403	(2)		22101.07	−06	$z^5P_2^\circ - e^5S_2$
W	§4520.3	(1)		22116.2	−3	$c^3P_1 - u^5D_2^\circ$
U	4518.45	(1)		22125.30	−08	$b^3H_6 - w^3G_5^\circ$
B	4517.530	(2)		22129.80	+03	$c^3P_1 - y^3P_1^\circ$
SS	4515.178	(1)		22141.33	−04	$z^7F_2^\circ - e^5D_2$
J	4514.189	(2)		22146.18	+02	$a^1G_4 - u^5D_4^\circ$
U	*4509.306	(1)		22170.16	−02	$b^1G_4 - u^3D_3^\circ$
					−18	$a^1G_4 - u^5D_3^\circ$
J	4504.838	(2)		22192.15	−04	$z^5D_2^\circ - e^3F_3$
U	4502.590	(1)		22203.23	+02	$a^1H_5 - x^3H_6^\circ$
J	4495.966	(1)		22235.95	−07	$z^5P_2^\circ - f^5F_2$
J	4495.566	(1)		22237.92	00	$z^5P_3^\circ - e^3D_3$
V	*4495.386	(1)		22238.81	+05	$z^7F_0^\circ - e^5D_1$
					+20	$z^3F_4^\circ - h^5D_3$
B	4494.568	12	III	22242.86	00	$a^5P_2 - x^5D_3^\circ$
W	4493.3	(1)		22249.1	+3	$a^1H_5 - x^3H_5^\circ?$
V	4492.693	(1n)		22252.14	−01	$z^3F_2^\circ - g^5F_1$
J	*4490.773	(2n)		22261.66	+19	$z^3F_3^\circ - e^3G_4$
					−06	$z^3F_3^\circ - f^3D_2$
J	4490.084	(2)	IV	22265.07	−01	$c^3P_2 - z^3S_1^\circ$
B	4489.741	3	IA	22266.77	00	$a^5D_0 - z^7F_1^\circ$
J	*4488.917	(2)	IV	22270.86	+09	$b^3F_4 - y^5G_5^\circ$
					−07	$z^5P_2^\circ - e^3D_2$
J	4488.140	(2n)		22274.71	−04	$z^5P_3^\circ - c^7F_2$
J	4485.679	(2)	IV	22286.93	−03	$z^5P_1^\circ - e^5P_1$
J	4484.227	4	IV	22294.15	−01	$z^5P_3^\circ - g^5D_4$
V	4482.750	(2)		22301.50	−04	$z^5P_2^\circ - g^5D_3$
J	4482.257	6	I	22303.95	00	$a^5P_1 - x^5D_2^\circ$
J	4482.171	4		22304.38	00	$a^5D_1 - z^7F_2^\circ$
J	4481.621	(2)		22307.12	−07	$z^5P_1^\circ - e^3D_1$
J	4480.142	(3)	IV	22314.48	−04	$a^1G_4 - x^3F_4^\circ$
J	*4479.612	(3)	IV	22317.12	+05	$z^5P_1^\circ - g^5D_2$
					−07	$a^1I_6 - 6_5^\circ$
U	4478.040	(1)		22324.95	−11	$a^5P_2 - y^7P_2^\circ$
Q	4476.082	(4)		22334.72	+02	$z^5P_1^\circ - e^5P_2$
I	4476.021	10	III	22335.03	00	$b^3P_1 - x^3D_2^\circ$
J	*4472.721	(2)		22351.50	+02	$b^3H_5 - y^1G_4^\circ$
					−05	$b^5D_2 - y^1D_2^\circ$
SS	4471.810	(1)		22356.06	−02	$z^3F_3^\circ - f^5G_3$
SS	4471.685	(1)		22356.68	−04	$a^5D_1 - z^7F_1^\circ$
I	4469.381	5n	IV	22368.21	−04	$z^5P_2^\circ - e^5P_3$
U	4467.446	(1)		22377.89	−05	$c^3F_3 - w^1F_3^\circ$
V	4466.939	(2)		22380.43	−01	$z^3D_2^\circ - f^3D_2$
B	4466.554	12	II	22382.36	−02	$b^3P_2 - x^3D_3^\circ$
					+10	$(a^5D_1 - z^7F_0^\circ)$
U	4466.181	(1)		22384.23	−07	$b^5D_3 - 7_2^\circ$
W	4465.3	(1)		22388.6	+1	$y^5F_4^\circ - 1_5$
U	4464.766	(2)	IV	22391.33	00	$c^3P_2 - y^3P_2^\circ$
J	*4461.989	(4)	IV	22405.26	−11	$z^5P_3^\circ - f^5F_4$
					+07	$c^3P_1 - u^5D_1^\circ$
					−08	$b^5D_2 - x^1D_2^\circ$
B	4461.654	8	I	22406.94	00	$a^5D_2 - z^7F_3^\circ$
U	4461.373	(1)		22408.36	00	$a^1P_1 - w^3P_0^\circ$
V	4461.205	(2)		22409.20	−03	$c^3P_2 - u^5D_3^\circ$
B	4459.121	10	III	22419.67	00	$a^5P_3 - x^5D_3^\circ$
V	4458.101	(3)		22424.80	+11	$z^5D_3^\circ - f^3D_3$
J	4456.331	(1)		22433.71	−03	$a^1G_4 - z^3H_5^\circ$
J	4455.032	(2)		22440.25	−03	$z^5F_4^\circ - f^3D_3$
J	4454.655	(1)		22442.15	+08	$b^5D_3 - x^1D_2^\circ$
B	4454.383	5	III	22443.52	−01	$b^3P_2 - x^3D_2^\circ$
J	4450.320	(3)		22464.01	00	$c^3P_0 - y^3S_1^\circ$
B	4447.722	9	III	22477.13	00	$a^5P_1 - x^5D_1^\circ$
J	4447.134	(2)Mn?	IV	22480.10	00	$a^5P_2 - y^7P_2^\circ$
J	4446.842	(2)		22481.58	00	$z^5P_1^\circ - g^5D_1$
U	4445.48	(1)	IA	22488.47	−03	$a^5D_2 - z^7F_2^\circ$
B	4443.197	7	III	22500.02	−02	$b^3P_0 - x^3D_1^\circ$
J	4442.835	(2)	IV	22501.85	−02	$a^5P_2 - y^7P_2^\circ$
B	4442.343	12	III	22504.35	00	$a^5P_2 - x^5D_2^\circ$
V	4440.972	(2)		22511.29	−06	$a^3D_2 - v^3D_2^\circ$
U	4440.838	(1)		22511.97	−01	$z^3D_1^\circ - f^3D_1$
V	4440.479	(1)		22513.79	−03	$z^5P_3^\circ - e^7S_3$
U	4439.883	(2)	IV	22516.81	00	$a^5P_2 - z^5S_2^\circ$
V	4439.643	(1)		22518.03	−06	$a^1G_4 - x^3F_3^\circ$
K	4438.353	(2)		22524.58	00	$z^5P_1^\circ - g^5D_0$
V	4436.931	(2)		22531.80	−05	$a^1G_4 - z^3H_4^\circ$
J	4435.151	2	IIA	22540.84	00	$a^5D_2 - z^7F_1^\circ$
J	4433.793	(3n)		22547.74	−06	$z^5P_3^\circ - f^5F_3$
J	4433.223	3n	IV	22550.64	−03	$z^5P_2^\circ - e^3P_1$
J	4432.572	(3)		22553.95	−03	$a^1H_5 - u^3G_5^\circ$
B	4430.618	6	III	22563.90	00	$a^5P_1 - x^5D_0^\circ$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig
V	4430.197	(2)	IV	22566.04	−05	$c^3P_2 - y^3P_1^\circ$
U	4429.32	(1)		22570.51	−11	$z^3F_3^\circ - f^5G_2$
B	4427.312	10	I	22580.75	00	$a^5D_3 - z^7F_4^\circ$
					−04	$(z^5P_2^\circ - g^5D_2)$
U	4425.660	(1)		22589.18	−02	$a^1H_5 - 4_5^\circ$
U	4424.192	(1)		22596.67	−05	$a^1D_2 - v^3F_2^\circ$
V	4423.858	(2l)		22598.38	−04	$z^5P_2^\circ - e^5P_2$
U	4423.142	(1)		22602.04	+04	$b^3G_4 - u^5D_4^\circ$
U	4422.884	(1n)		22603.36	−07	$a^3D_2 - 3_2^\circ$
B	4422.570	6	III	22604.96	−01	$b^3P_1 - x^3D_1^\circ$
U	4418.429	(1)		22626.15	−03	$b^3G_4 - u^5D_3^\circ$
B	4415.125	20	II	22643.08	00	$a^3F_2 - z^5G_2^\circ$
SS	4414.464	(1)		22646.47	+03	$a^3D_1 - 2_2^\circ$
J	4409.123	(2l)		22673.90	−03	$a^3D_2 - v^3D_1^\circ$
B	4408.419	6	III?	22677.52	−01	$a^5P_2 - x^5D_1^\circ$
J	4407.714	5	III?	22681.15	−01	$a^5P_3 - x^5D_2^\circ$
B	4404.752	30	II	22696.40	+01	$a^3F_3 - z^5G_4^\circ$
U	4401.450	(2)		22713.43	−04	$b^3P_2 - x^3D_1^\circ$
J	4401.293	(5)		22714.24	00	$z^5P_3^\circ - g^5D_3$
V	*4395.514	(1w)		22744.10	+17	$z^3D_3^\circ - e^5G_4$
					−08	$z^3D_3^\circ - f^5D_2$
U	4395.286	(2)		22745.28	−02	$z^5P_2^\circ - g^5D_1$
U	4392.58	(1)		22759.29	−01	$z^7F_4^\circ - e^5G_4$
B	4390.954	4	IV	22767.72	−02	$b^3G_3 - z^3H_4^\circ$
U	4390.458	(1)		22770.29	−06	$b^3G_4 - x^5F_4^\circ$
J	4389.244	2	IIA	22776.59	+01	$a^5D_3 - z^7F_2^\circ$
J	4388.412	4n	IV	22780.91	−03	$z^5P_3^\circ - e^5P_3$
J	4387.897	3	IV	22783.58	+01	$c^3P_1 - y^3S_1^\circ$
W	4386.6	(1n)		22790.3	0	$b^3D_1 - u^5P_1^\circ$
U	4385.258	(1)		22797.29	−05	$b^3G_3 - w^3D_2^\circ$
V	4384.682	(1)		22800.29	−05	$c^3P_2 - w^3D_2^\circ$
B	4383.547	45r	II	22806.19	00	$a^3F_4 - z^5G_5^\circ$
U	4382.773	(2)		22810.22	−03	$a^1H_5 - 6_5^\circ$
U	4377.793	(1)		22836.16	−03	$a^3D_1 - v^3D_2^\circ$
U	4377.330	(1)		22838.58	+04	$z^3D_3^\circ - f^5G_3$
V	*4376.782	(1)		22841.44	−01	$c^3P_2 - u^5D_1^\circ$
					+01	$b^3D_3 - t^3D_3^\circ$
B	4375.932	9	I	22845.88	00	$a^3D_4 - z^7F_5^\circ$
U	4374.491	(1)		22853.40	+03	$a^3D_2 - z^1D_2^\circ$
J	*4373.563	(2)		22858.25	−15	$b^3F_4 - w^5D_4^\circ$
					−02	$b^3G_3 - x^3F_2^\circ$
U	4372.991	(1)		22861.24	−03	$c^3P_3 - x^3F_2^\circ$
B	4369.774	7	III	22878.07	−01	$a^1G_4 - z^1G_4^\circ$
J	4367.906	2	IIIA	22887.86	+01	$a^5F_2 - z^5G_2^\circ$
J	4367.581	5	IV	22889.56	−01	$b^5G_4 - z^3H_5^\circ$
U	4365.899	(1)		22898.38	00	$b^3G_4 - w^3D_3^\circ$
U	4360.810	(1)		22925.10	00	$b^3D_3 - u^3D_2^\circ$
B	4358.505	3	IV	22937.22	+02	$b^3G_5 - u^5D_4^\circ$
B	4352.737	9	III	22967.62	+01	$a^5P_1 - z^5S_2^\circ$
J	4351.549	3	IV	22973.88	−04	$b^3G_4 - x^3F_3^\circ$
J	4348.939	(1)		22987.67	−02	$b^5G_4 - z^3H_4^\circ$
U	4347.851	(1)		22993.43	−05	$z^5P_3^\circ - g^5D_2$
V	4347.239	(1)		22996.67	−02	$a^5D_4 - z^7F_4^\circ$
J	4346.558	(2)		23000.27	−01	$b^3H_4 - v^3G_4^\circ$
J	4343.699	(2)		23015.40	+02	$a^1G_4 - w^5G_4^\circ$
J	4343.257	(2)		23017.75	+10	$a^3D_3 - v^3D_2^\circ$
W	*4340.5	(1)		23032.4	0	$a^3G_3 - x^3D_2^\circ$
					+1	$z^5F_1^\circ - f^5D_2$
J	4338.260	(2)		23044.26	00	$a^5P_3 - x^5F_4^\circ$
B	4337.049	10	II	23050.69	−01	$a^3F_3 - z^5G_3^\circ$
U	4335.89	(1)		23056.86	+06	$z^3D_1^\circ - e^3G_3$
U	4330.959	(1)		23083.10	−01	$b^3H_5 - y^3H_6^\circ$
W	4327.92	(2)		23099.31	−11	$b^3H_4 - y^3H_4^\circ$
J	4327.100	3	V	23103.69	−03	$a^1D_2 - y^1D_2^\circ$
U	4326.760	(2)		23105.51	−04	$b^3G_5 - x^3F_4^\circ$

Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig
B	4325.765	35	II	23110.82	00	$a^3F_2 - z^3G_3^\circ$
					−13	$(a^5D_4 - z^7F_3^\circ)$
U	4324.966	(1)		23115.09	−02	$a^5P_2 - x^5F_3^\circ$
U	4320.52	(1)		23138.88	−19	$z^5F_2^\circ - f^5D_2$
SS	4320.376	(1)		23139.65	−08	$z^5F_2^\circ - f^5D_3$
SS	4317.067	(1)		23157.39	−12	$a^1D_2 - x^1D_2^\circ$
B	4315.087	10	III	23168.01	+01	$a^5P_2 - z^5S_2^\circ$
U	4309.380	4	IV	23198.69	−04	$b^3G_5 - z^3H_6^\circ$
J	4309.036	(2)		23200.54	−01	$a^1I_6 - y^3I_6^\circ$
B	4307.906	35	II	23206.63	−01	$a^3F_3 - z^3G_4^\circ$
SS	4306.601	(1)		23213.66	−13	$z^5F_1^\circ - f^5D_1$
B	4305.455	3	IV	23219.84	+01	$c^3P_2 - y^3S_1^\circ$
U	4305.20	(1)		23221.22	+03	$a^1D_2 - u^3G_3^\circ$
J	4304.552	(1)		23224.71	−06	$b^3G_5 - z^3H_5^\circ$
J	4302.191	(2)		23237.46	−03	$a^1G_4 - x^3G_4^\circ$
U	4300.825	(1)		23244.84	+01	$z^3F_2^\circ - f^3F_2$
U	4299.635	(1)		23251.27	00	$b^3G_3 - w^5G_4^\circ$
I	4299.242	18	III	23253.39	−01	$z^7D_4^\circ - e^7D_5$
					+03	$(b^3H_5 - y^3H_5^\circ)$
B	4298.040	(2)	IV	23259.90	−03	$a^1G_4 - x^3G_5^\circ$
V	4294.939	(1w)		23276.69	−14	$b^3H_5 - v^3G_4^\circ?$
B	4294.128	15	II	23281.09	+01	$a^3F_4 - z^5G_4^\circ$
U	4292.290	(1)		23291.06	+02	$a^5P_3 - x^5F_2^\circ$
I	*4291.466	4	IA	23295.53	+06	$a^3F_4 - z^5G_2^\circ$
					00	$a^5D_3 - z^7P_4^\circ$
J	4290.870	(1)		23298.76	−02	$b^3P_2 - w^5P_3^\circ$
J	4290.382	(2)		23301.41	+03	$b^3G_4 - w^5G_5^\circ$
U	4288.965	(1)		23309.11	−01	$b^3F_3 - w^5D_2^\circ$
J	4288.148	(2)		23313.55	−01	$a^3G_3 - y^3G_3^\circ$
U	4286.992	(1)		23319.84	−04	$z^3F_3^\circ - f^3F_3$
U	4286.437	(1)		23322.86	−03	$b^3G_6 - z^3H_4^\circ$
U	4285.829	(1)		23326.17	+02	$b^3D_2 - t^3D_2^\circ$
B	4285.445	3	IV	23328.26	+01	$b^3H_6 - y^3H_6^\circ$
U	4284.415	(1)		23333.87	−05	$b^3G_4 - z^1G_4^\circ$
B	4282.406	12	III	23344.81	00	$a^5P_3 - z^5S_2^\circ$
U	4280.53	(1)		23355.04	+07	$b^3H_6 - v^3G_5^\circ$
J	4279.864	(1)		23358.68	+03	$b^3P_0 - w^5P_1^\circ$
V	4279.480	(1)		23360.77	+02	$z^3D_3^\circ - f^3F_4$
J	4278.234	(1)		23367.58	−02	$z^5F_4^\circ - f^5D_3$
U	4277.68	(1)		23370.60	−02	$a^3H_5 - z^3H_5^\circ$
J	4276.684	(1)		23376.05	−07	$z^3F_4^\circ - f^3F_4$
U	4275.72	(1)		23381.32	−09	$b^3F_4 - w^5F_4^\circ$
W	4273.87	(1)		23391.44	+01	$c^3P_1 - v^3P_2^\circ$
B	4271.764	35	II	23402.97	−01	$a^3F_4 - z^3G_5^\circ$
B	4271.159	20	III	23406.28	−01	$z^7D_3^\circ - e^7D_4$
J	4268.744	2	IV	23419.53	+01	$a^3D_2 - w^3P_1^\circ$
B	4267.830	5	IV	23424.54	+01	$c^3P_0 - x^3P_1^\circ$
J	4266.968	3	IV	23429.27	−02	$a^3G_4 - y^3G_4^\circ$
J	*4265.260	(2)		23438.66	+06	$z^3D_2^\circ - f^3F_3$
					−11	$z^3D_1^\circ - e^3P_1$
U	4264.743	(1)		23441.50	+01	$z^3D_1^\circ - e^3P_1$
J	4264.209	(2)		23444.43	−04	$z^5F_4^\circ - e^7P_3$
H	4260.479	35	III	23464.96	00	$z^7D_5^\circ - e^7D_5$
V	4260.135	(1)		23466.85	+01	$c^3P_1 - v^5F_2^\circ$
U	4260.003	(2)		23467.58	−04	$z^5F_5^\circ - e^7F_6$
					−27	$(a^5P_3 - x^5F_2^\circ)$
J	4258.956	(1)		23473.34	−04	$b^3G_3 - x^3G_4^\circ$
J	4258.619	(1)		23475.20	−05	$b^3P_2 - w^5P_2^\circ$
J	4258.320	2	IA	23476.85	−02	$a^5D_2 - z^7P_3^\circ$
U	4256.79	(1)		23485.29	+10	$y^5F_3^\circ - i^5D_3$
V	4256.212	(3)		23488.48	−02	$z^5F_2^\circ - f^7D_1$
U	4255.496	(1)		23492.43	+03	$b^3G_3 - w^5G_2^\circ$
V	*4254.938	(1)		23495.51	+05	$b^3G_3 - x^3G_3^\circ$
					+11	$c^3P_2 - w^5G_2^\circ$
B	4250.790	25	II	23518.44	00	$a^3F_2 - z^3G_3^\circ$

TABLE B—(*Continued*)

Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig	Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig
J	4250.125	25	III	23522.12	00	$z^7D_2° - e^7D_3$	V	4198.268	(1)		23812.66	−13	$z^5F_4° - e^5G_4$
J	4248.228	4	IV	23532.62	−03	$c^3P_1 - x^3P_2°$	V	4196.533	(1)		23822.51	+06	$b^3G_5 - v^5F_5°$
I	4247.432	12	III	23537.03	−05	$z^5F_4° - e^5G_5$	J·	4196.218	4	IV	23824.29	−07	$z^5F_3° - e^5G_3$
SS	4246.572	(1)		23541.80	+12	$z^5F_1° - e^7F_1$	J	4195.615	(3)		23827.72	+03	$c^3P_2 - v^5P_2°$
J	4246.090	3	V	23544.47	00	$b^3D_3 - v^3P_2°$	J	4195.337	5	IV	23829.30	−05	$z^5F_5° - e^5G_5$
M	4245.358	tr?	IV?	23548.53	−09	$z^5F_5° - f^5D_4$	J	4191.685	(2)		23850.05	−05	$b^3P_0 - y^3P_1°$
I	4245.258	6	III	23549.09	00	$b^3P_0 - z^3S_1°$	J	4191.436	15	III	23851.47	00	$z^7D_2° - e^7D_1$
V	4243.786	(1w)		23557.25	+17	$z^3D_3° - e^3P_2$	U	4189.564	(2)		23862.13	−04	$b^1G_4 - y^1F_3°$
U	4243.370	(2)		23559.57	+02	$b^3D_2 - v^3P_2°$	J	4187.802	20	III	23872.17	−01	$z^7D_4° - e^7D_3$
J	4242.730	(2)		23563.12	−02	$a^3D_2 - w^3P_2°$	U	4187.589	(1)		23873.38	−03	$z^5F_1° - e^7G_2$
U	4242.592	(1)		23563.89	+03	$a^3G_4 - y^3G_3°$	J	4187.044	20	III	23876.49	−01	$z^7D_3° - e^7D_2$
V	4241.112	(1)		23572.11	+03	$b^3P_2 - w^5P_1°$	B	4184.895	10	III	23888.75	−03	$b^3P_2 - y^3P_2°$
J	4240.372	(2)		23576.22	+01	$a^1D_2 - t^3D_1°?$	U	4184.22	(1)		23892.61	+03	$a^3G_5 - x^5G_6°$
J	*4239.847	2	III	23579.14	{+05 / −06}	$a^3G_5 - y^3G_5°$ / $a^5F_3 - z^3F_4°$	V	4183.025	(1)		23899.43	−13	$z^5F_3° - e^3D_3$
U	4239.735	3	IV	23579.76	+02	$b^3G_5 - w^5G_6°$	U	4182.770	(2b)		23900.89	−04	$z^5F_2° - e^7G_3$
I	4238.816	10n	IV	23584.88	−04	$z^5F_3° - e^5G_4$	J	4182.384	4	IV	23903.09	−01	$c^3P_2 - v^5F_2°$
J	*4238.027	4	IV	23589.27	{−02 / 00}	$z^5F_2° - e^5S_2$ / $z^5F_2° - e^7F_3$	J	4181.758	15	III	23906.67	00	$b^3P_2 - u^5D_3°$
M	4237.085	(2)	IIIA	23594.52	−05	$a^5F_3 - z^3D_3°$	J	4177.597	4	IIA	23930.48	−02	$a^5F_4 - z^3F_4°$
U	4236.76	(1)		23596.32	+04	$b^3D_1 - v^3P_2°$	SS	4177.084	(1)		23933.42	−07	$z^5F_5° - f^7D_4$
I	4235.942	25	III	23600.88	+01	$z^7D_4° - e^7D_4$	J	4176.571	7n	IV	23936.36	{−04 / −01}	$z^5F_4° - f^5F_5$ / $(z^5F_3° - e^7F_2)$
I	4233.608	18	III	23613.89	00	$z^7D_1° - e^7D_2$	B	4175.640	10	III	23941.70	−02	$b^3P_1 - u^5D_2°$
U	4232.732	1	IA	23618.78	−02	$a^5D_1 - z^7P_2°$	J	4174.917	5	IIA	23945.85	−01	$a^5F_4 - z^3D_3°$
V	4231.525	(1)		23625.51	−07	$a^3D_3 - v^3G_3°$	U	4174.419	(1)		23948.70	−10	$a^1H_5 - w^3H_4°$
U	4230.584	(1)		23630.77	−06	$c^3P_2 - v^5P_3°$	V	4173.926	2	IIA	23951.53	−03	$a^5F_2 - z^3D_3°$
J	4229.760	(1)	III	23635.37	−02	$a^3F_4 - z^5G_3°$	J	4173.322	2	IV	23955.00	−03	$b^3P_1 - y^3P_1°$
J	*4229.516	(1gn)		23636.73	{+15 / −03}	$b^3G_5 - w^5G_5°$ / $a^3D_1 - w^3P_1°$	J	4172.749	4	IIA	23958.29	−02	$a^5F_3 - z^3D_2°$
SS	4228.722	(1)		23641.17	−05	$z^5F_4° - f^7D_4$	V	4172.641	(1)		23958.91	−01	$z^5F_5° - e^7F_5$
J	4227.434	30	III	23648.37	{−01 / −07}	$z^5F_5° - e^5G_6$ / $(z^5F_2° - e^7F_1)$	J	4172.126	5	IV	23961.86	+02	$a^3D_3 - w^3P_2°$
J	4226.426	3	IV	23654.01	−01	$b^3P_1 - z^3S_1°$	V	4171.904	(2)		23963.14	−02	$a^3D_2 - z^1F_3°$
J	4225.956	3	IV	23656.65	+01	$a^1G_4 - w^3G_3°$	V	4171.696	(2)		23964.34	+02	$b^1G_4 - x^1F_3°$
J	4225.460	6n	IV	23659.42	−04	$z^5F_2° - e^5G_3$	B	4170.906	5	IV	23968.87	−03	$c^3P_2 - x^3P_2°$
U·	4224.517	3n	IV	23664.70	−03	$z^5F_1° - e^7F_2$	U	4169.766	(1)		23975.43	−05	$z^5F_3° - e^5G_2$
J	4224.176	6n	IV	23666.61	−04	$z^5F_4° - e^7F_5$	U	4168.946	(1w)		23980.14	−03	$z^5F_2° - e^7G_2$
J	4222.219	12	III	23677.58	−01	$z^7D_3° - e^7D_3$	V	4168.625	(1w)		23981.99	−04	$z^5F_4° - e^7F_3$
J	4220.347	4	IV	23688.09	+03	$c^3P_1 - x^3P_0°$	V	4167.862	(2)		23986.38	00	$b^3H_4 - x^1G_4°$
B	4219.364	12	IV	23693.60	−01	$a^1H_5 - y^1I_6°$	U	4164.80	(1)		24004.01	−11	$b^3G_4 - v^5F_4°$
J	4217.551	7n	IV	23703.79	−03	$z^5F_1° - e^5G_2$	V	*4163.676	(1)		24010.49	{−07 / +08}	$z^5F_2° - e^7S_3$ / $a^3G_5 - x^5G_5°$
B	4216.186	8	I	23711.46	−01	$a^5D_4 - z^7P_4°$	V	4161.488	(1)		24023.12	00	$b^3G_3 - w^3G_4°$
U	4215.970	(1)		23712.68	−01	$a^3G_5 - y^3G_4°$	V	4161.080	(1)		24025.47	−01	$z^5F_4° - e^7F_4$
J	*4215.430	2	IV	23715.72	{+20 / −05}	$a^3G_5 - x^5G_2°$ / $b^3G_4 - x^3G_5°$	V	4160.561	(1)		24028.47	−06	$b^3G_5 - x^3G_4°$
B	4213.650	5	IV	23725.73	+02	$b^3P_1 - y^3P_0°$	J	4158.798	5n	V	24038.66	−03	$z^5F_1° - f^5F_2$
J	4210.352	15	III	23744.32	−01	$z^7D_1° - e^7D_1$	J	4157.788	8n	IV	24044.49	−06	$z^5F_2° - f^5F_3$
J	*4208.610	3n	V	23754.15	{−02 / −04}	$z^5F_3° - e^7F_3$ / $z^5F_3° - e^5S_2$	B	4156.803	12	III	24050.19	−03	$b^3P_2 - u^5D_3°$
J	4207.130	4	IV	23762.50	−02	$b^3P_2 - z^3S_1°$	V	4156.670	(1)		24050.96	−01	$b^3G_5 - x^3G_5°$
J	4206.702	3	IA	23764.92	−02	$a^5D_3 - z^7P_3°$	V	4156.460	(1)		24052.18	−04	$z^5F_4° - e^5G_3$
J	4205.546	(2)		23771.45	−04	$z^5F_2° - e^7F_2$	J	4154.812	9n	IV	24061.72	−04	$z^5F_4° - e^7G_5$
B	4203.987	10	III	23780.27	−01	$b^3P_1 - y^3P_2°$	J	4154.502	12	III	24063.51	−02	$b^3P_2 - y^3P_1°$
V	4203.953	(1)		23780.46	−10	$a^1I_6 - z^1I_6°$	J	4154.109	(1)		24065.79	−04	$z^5F_3° - e^7G_4$
V	4203.570	(1)		23782.63	+01	$a^5F_1 - z^3D_1°$	J	4153.906	10n	IV·	24066.97	−03	$z^5F_3° - f^5F_4$
U	4203.30	(1)		23784.15	−02	$b^3G_3 - v^5F_3°$	J	4152.172	4	IIA	24077.02	−01	$a^5F_3 - z^3F_3°$
V	*4202.755	(1)		23787.24	{+07 / +01}	$c^3P_2 - v^5F_3°$ / $a^1G_4 - w^3G_4°$	V	4151.957	(1)		24078.26	−06	$a^1D_2 - t^3D_2°$
B	4202.031	30	I	23791.33	00	$a^3F_4 - z^3G_4°$	V	4150.258	(4)		24088.12	−05	$z^5F_1° - f^5F_1$
W	4201.73	(1)		23793.04	−06	$a^1H_5 - w^3H_5°$	SS	4149.767	(1)		24090.97	−03	$a^5D_3 - z^7P_2°$
J	4200.930	3n	V	23797.57	−05	$z^5F_3° - e^7F_4$	J	4149.372	5n	V	24093.26	−05	$z^5F_5° - e^7G_6$
W	4199.97	1	IA	23803.01	+09	$a^5D_2 - z^7P_2°$	B	4147.673	10	III	24103.13	−01	$a^3F_4 - z^3G_3°$
J	4199.098	20	III	23807.95	+01	$a^1G_4 - z^1H_5°$	U	4146.070	(2)		24112.45	−03	$b^3G_4 - w^3G_3°$
J	4198.645	4n	V	23810.52	−07	$z^5F_2° - e^5G_2$	U	4145.206	(1)		24117.48	+01	$z^5F_3° - x^5G_4°$
J	4198.310	20	III	23812.42	−01	$z^7D_5° - e^7D_4$	B	4143.871	30	I	24125.24	−01	$a^5F_3 - y^3F_4°$
							J	4143.418	15	III	24127.88	00	$a^1G_4 - y^1G_4°$
							U	4142.625	(1N)		24132.50	−14	$y^5F_1° - g^5G_2$
							V	4141.862	(1)		24136.95	+01	$b^3G_3 - w^3G_3°$
							U	4141.352	(1)		24139.92	−02	$c^3P_2 - w^3G_3°$

TABLE B—(*Continued*)

Ref	λ I A	Int	T C	Observed	o—c	Desig
V	*4140.441	(1)		24145.23	−22	$z^5F_2^\circ$ − f^5F_2
					+16	$z^5F_3^\circ$ − e^7G_2
J	4139.933	2	IIA	24148.20	−02	a^5F_2 − $z^3F_2^\circ$
U	4138.84	0		24154.57	+03	a^3P_2 − $x^5P_3^\circ$
J	4137.002	7	IV	24165.30	−03	a^1P_1 − $y^1D_2^\circ$
J	4136.512	(1)		24168.16	+06	$z^5F_4^\circ$ − e^7G_4
U	4135.77	(1)		24172.50	−06	$y^5D_2^\circ$ − i^5D_2
B	4134.681	12	IV	24178.87	−01	b^3P_2 − $w^3D_3^\circ$
V	*4134.433	(1)		24180.32	−05	$z^5F_2^\circ$ − e^3D_2
					−03	c^5P_2 − $x^5P_1^\circ$
U	4134.340	(1)		24180.86	−02	a^5D_4 − $z^7P_3^\circ$
J	4133.869	(2)		24183.62	−05	$z^5F_4^\circ$ − g^5D_4
J	4132.903	8	III	24189.27	−01	b^3P_1 − $w^3D_2^\circ$
					+25	$(a^3F_2$ − $y^5P_2^\circ)$
B	4132.060	25	II	24194.20	00	a^3F_2 − $y^3F_3^\circ$
U	*4130.035	(1)		24206.06	+02	a^3F_3 − $y^5P_3^\circ$
					+02	c^5P_0 − $v^5D_1^\circ$
U	4129.22	(1)		24210.84	−14	$z^5F_2^\circ$ − g^5D_3
J	*4127.807	3n	V	24219.13	−14	$z^5D_1^\circ$ − f^5D_2
					+01	a^1P_1 − $x^1D_2^\circ$
B	4127.612	7	IV	24220.27	−03	b^3P_0 − $w^3D_1^\circ$
U	4126.88	(1)		24224.57	−09	b^3P_1 − $u^5D_0^\circ$
J	4126.192	3n	IV	24228.61	−07	$z^5F_5^\circ$ − f^5F_5
J	4125.884	(2)		24230.42	+03	b^3P_1 − $u^5D_1^\circ$
J	4125.622	(1)		24231.96	00	$y^5F_4^\circ$ − g^5G_5
J	*4123.748	(1)		24242.97	+10	b^3F_2 − $x^3D_2^\circ$
					−10	b^3G_4 − $w^3G_4^\circ$
J	4122.522	4	IV	24250.18	−03	b^3P_1 − $x^3F_2^\circ$
B	4121.806	5	IV	24254.39	−03	b^3P_2 − $x^3F_3^\circ$
J	4120.211	5	IV	24263.78	00	b^3G_4 − $z^1H_5^\circ$
V	4118.904	(1)		24271.48	−12	$z^5D_3^\circ$ − e^7P_3
B	4118.549	15	IV	24273.57	−05	a^1H_5 − $z^1I_6^\circ$
V	*4117.872	(1)		24277.56	−12	$z^5F_2^\circ$ − e^5P_3
					−01	$y^5F_2^\circ$ − g^5G_2
U	4117.71	(1)		24278.52	+01	$z^5P_2^\circ$ − f^3D_3
U	4117.32	(1)		24280.82	−05	c^3P_1 − 2_2°
U	4116.97	(1)		24282.88	−11	$z^5D_3^\circ$ − f^5D_4
J	4114.957	(1w)		24294.76	−11	$z^5F_4^\circ$ − f^5F_4
B	4114.449	5	IV	24297.76	−02	b^3P_2 − $w^3D_2^\circ$
J	4112.972	3n	V	24306.48	+02	$y^5F_5^\circ$ − g^5G_6
V	4112.35	(1)		24310.16	−19	$z^5F_3^\circ$ − f^5F_2
W	4111.1?	(1)		24317.6	−2	$z^5F_6^\circ$ − e^7F_4
J	4109.808	9	IV?	24325.20	−04	b^3P_1 − $w^3D_1^\circ$
J	4109.070	(1)		24329.57	−09	$z^5D_0^\circ$ − f^3D_1
B	4107.492	12	III	24338.91	+02	b^3P_2 − $u^5D_1^\circ$
V	4106.437	(1)		24345.17	−09	$z^5F_3^\circ$ − e^3D_2
U	4106.265	(1)		24346.19	−03	b^3F_3 − $x^3D_3^\circ$
U	4104.97	(1)		24353.86	−17	$z^5F_5^\circ$ − e^7G_5
K	*4104.132	3	V	24358.84	−12	$z^5D_2^\circ$ − f^5D_2
					+13	b^3P_2 − $x^3F_2^\circ$
U	4101.681	(1)		24373.39	+07	a^3P_0 − $w^5D_1^\circ$
J	4101.272	(1)		24375.82	−05	$z^5F_3^\circ$ − g^5D_3
J	4100.745	3	IIA	24378.96	−03	a^5F_5 − $z^3F_4^\circ$
U	*4099.08	(1)		24388.86	−22	b^5H_4 − $u^5F_5^\circ$?
					−13	a^3D_3 − $x^1G_4^\circ$
J	4098.183	4n	IV	24394.20	−04	$z^5D_3^\circ$ − f^5D_3
J	4097.099	(1)		24400.65	−11	$z^5D_1^\circ$ − f^5D_1
U	4096.114	(1)		24406.52	+02	b^3D_2 − $x^1F_3^\circ$
I	4095.975	4	IV	24407.35	−02	b^3F_3 − $x^3D_2^\circ$
V	4092.512	(1)		24428.00	−32	a^5F_4 − $z^3F_3^\circ$
J	4091.561	(1)		24433.68	−06	b^3P_2 − $w^3D_1^\circ$
V	4090.984	(1w)		24437.12	00	$z^5F_4^\circ$ − f^5F_3
U	4090.077	(1)		24442.54	−04	$z^5F_3^\circ$ − e^5P_3
J	4089.225	(1)		24447.64	−04	b^3G_5 − $w^3G_5^\circ$
V	4088.567	(1)		24451.57	−02	b^3D_2 − $v^3P_1^\circ$

Ref	λ I A	Int	T C	Observed	o—c	Desig
J	4087.099	(1)		24460.35	−03	$z^5F_5^\circ$ − e^7G_4
W	4085.98	(1)		24467.05	+03	$y^5D_3^\circ$ − i^5D_2
J	4085.312	4	IV	24471.05	−05	$z^5D_3^\circ$ − e^7P_3
J	4085.011	4	IV	24472.85	−01	b^3P_1 − 1_2°
J	4084.498	6	IV	24475.93	−01	$z^5F_5^\circ$ − g^5D_4
J	4083.780	(1)	IV	24480.23	−11	$z^5F_2^\circ$ − e^3D_1
V	4083.554	(1)		24481.59	−02	a^3P_2 − $x^5P_2^\circ$
U	4082.432	(2)		24488.31	−01	b^3D_1 − $v^3P_1^\circ$
J	4082.125	(1)		24490.15	−07	$z^5F_2^\circ$ − g^5D_2
V	4080.886	(1w)		24497.59	−01	$z^5D_0^\circ$ − f^7D_1
J	4080.226	2n	IV	24501.55	−08	$z^5D_1^\circ$ − f^5D_0
J	4079.848	4	IV	24503.82	−02	b^3P_0 − $y^3S_1^\circ$
J	4078.365	4	IV	24512.73	−08	b^3F_2 − $x^3D_1^\circ$
SS	4076.884	(1)		24521.64	+03	$z^5D_2^\circ$ − e^7P_2
J	4076.810	(1w)		24522.08	−06	$z^5D_2^\circ$ − f^7D_3
J	4076.636	8n	IV	24523.13	−05	$z^5D_4^\circ$ − f^5D_4
V	4076.498	(1)		24523.96	−04	b^3F_2 − $y^3G_3^\circ$
J	4076.232	(1)		24525.56	−04	c^3P_1 − $v^3D_1^\circ$
J	4074.794	5	IV	24534.22	−03	a^1G_4 − $w^3F_4^\circ$
K	4073.760	4n	IV	24540.44	00	$z^5D_2^\circ$ − f^5D_1
V	4072.518	(2)		24547.93	−04	$z^5F_1^\circ$ − g^5D_1
H	4071.740	40	II	24552.62	+01	a^3F_2 − $y^3F_2^\circ$
U	4071.52	(1)		24553.94	00	b^3F_3 − $y^3G_4^\circ$
J	4070.766	5n	III	24558.49	+02	$z^5D_3^\circ$ − f^5D_2
U	4069.08	(1)		24568.67	−04	$z^5D_1^\circ$ − f^7D_1
J	4067.984	8n	III	24575.29	−03	$z^5D_4^\circ$ − e^7P_4
B	4067.275	4	III	24579.57	−02	b^3F_4 − $x^3D_3^\circ$
B	4066.979	6	III	24581.36	00	b^3P_2 − 1_2°
U	4066.590	(1)		24583.71	−01	b^3G_4 − $y^1G_4^\circ$
U	4065.392	(2)		24590.95	−02	$z^5F_1^\circ$ − g^5D_0
U	4064.45	(2)		24596.66	+02	a^3F_3 − $y^5P_2^\circ$
H	4063.597	45	II	24601.82	00	a^3F_3 − $y^3F_3^\circ$
J	4063.286	(3)		24603.70	−04	$z^5F_4^\circ$ − g^5D_3
J	4062.446	10	III	24608.78	+01	b^3P_1 − $y^3S_1^\circ$
V	4059.726	3	V	24625.27	−06	a^1D_2 − $z^1P_1^\circ$
V	4058.766	3	IV	24631.10	−05	a^3P_1 − $w^5D_2^\circ$
K	**4058.227	4n	IV	24634.37	−06	$z^5D_4^\circ$ − f^5D_3
J	4057.346	2	V	24639.72	−03	a^3G_3 − $x^3F_4^\circ$
U	4056.53	(1)		24644.67	+08	$z^7F_3^\circ$ − e^8F_3
W	4055.98	(1)		24648.02	−02	b^3D_2 − 11_3°
U	4055.039	3	V	24653.74	+02	b^3F_4 − $y^3G_5^\circ$
V	4054.883	3	V	24654.68	−05	$z^5F_2^\circ$ − g^5D_1
V	4054.833	(1)		24654.99	−13	$z^5F_5^\circ$ − g^5D_2
W	4054.18	(1)		24658.96	−02	$z^5D_2^\circ$ − f^7D_2
W	4053.82	(1)		24661.15	+03	c^3P_1 − $w^2F_2^\circ$
SS	4052.724	(1)		24667.82	−04	$z^5D_3^\circ$ − f^7D_4
V	4052.664	(1)		24668.18	−08	a^1G_4 − $w^3F_3^\circ$
V	4052.466	(1)		24669.39	−11	$z^5D_1^\circ$ − c^5S_2
J	*4052.312	(1)		24670.33	−11	$z^5F_4^\circ$ − e^5P_3
					+07	a^1I_5 − $t^3G_5^\circ$
J	4051.923	(2)		24672.70	−05	$z^5F_3^\circ$ − e^5P_2
U	4049.331	(1)		24688.49	−01	b^3F_3 − $y^3G_3^\circ$
V	*4047.315	(1)		24700.79	−04	a^3P_2 − $x^5P_1^\circ$
					+05	a^1I_5 − 12_5°
V	4046.629	(1)		24704.97	−07	c^3P_1 − $z^1D_2^\circ$
B	4045.815	60r	II	24709.94	00	a^3F_4 − $y^3F_4^\circ$
V	4045.139	(1)		24714.07	−06	b^3G_3 − 2_2°
J	4044.614	6	IV	24717.28	+01	b^3P_2 − $y^3S_1^\circ$
V	*4043.901	5n	IV	24721.64	−04	a^3G_4 − $u^5D_4^\circ$
					−02	$z^5D_2^\circ$ − f^7D_3
S	4041.911	(−)		24733.81	−01	b^3H_4 − $t^5D_3^\circ$
V	*4041.288	(1)		24737.62	−04	b^3H_4 − $v^3F_3^\circ$
					−11	a^3D_2 − $t^5D_3^\circ$
J	4040.650	4	V	24741.53	−04	a^3D_2 − $v^3F_3^\circ$
W	4039.94	(1)		24745.88	+02	a^3G_4 − $u^5D_3^\circ$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Observed	o−c	Desig	Ref	λ I A	Int	T C	Observed	o−c	Desig
Q	*4038.622	(−)		24753.95	{+11 / −01}	$b^3H_4 - u^5F_4^\circ$ / $a^1P_1 - u^3D_2^\circ$	J	3986.176	5	IV	25079.63	{+01 / +01}	$a^3D_3 - v^3F_4^\circ$ / $(z^5D_4^\circ - e^5G_4)$
V	4037.725	(1)		24759.45	+15	$a^3P_2 - y^5G_3^\circ?$	J	3985.393	3	IV	25084.56	−04	$a^3D_2 - y^1D_2^\circ$
SS	4033.190	(1)		24787.29	−02	$b^5F_4 - y^3G_4^\circ$	I	3983.960	10	III	25093.58	−03	$a^3G_4 - x^3F_2^\circ$
U	4032.630	4	III	24790.73	−01	$a^3F_4 - y^5P_3^\circ$	U	3983.35	(1)		25097.42	+04	$c^3P_2 - w^3F_2^\circ$
U	4032.469	(1)		24791.72	−10	$z^7F_1^\circ - e^5F_2$	J	3981.775	7	III	25107.35	−03	$a^3G_4 - z^3H_4^\circ$
U	4031.965	4	V	24794.82	−02	$a^3D_1 - v^3F_2^\circ$	U	3981.104	(1)		25111.58	−06	$a^3P_1 - v^5D_2^\circ$
V	4031.243	(2)		24799.26	−02	$c^3P_2 - v^3D_3^\circ$	W	3980.65	(1)		25114.45	−10	$z^7D_4^\circ - e^5D_4$
J	4030.499	(6)	IV	24803.84	−07	$z^5D_4^\circ - e^5G_5$	U	3979.630	(1)		25120.88	+06	$z^5D_2^\circ - e^7G_3$
V	4030.194	(3)		24805.72	−02	$a^5P_2 - x^5P_3^\circ$	U	3978.464	(1)		25128.25	−02	$b^3P_2 - v^5P_3^\circ$
V	*4029.640	3n	V	24809.13	{−05 / −03}	$z^5D_2^\circ - e^5S_2$ / $z^5D_2^\circ - e^7F_3$	I	3977.743	12	III	25132.80	−01	$a^5P_2 - x^5P_2^\circ$
J	4024.735	6n	V	24839.36	−07	$z^5D_3^\circ - e^5G_4$	J	*3976.865	(1)		25138.35	{+05 / −04}	$b^3G_5 - z^1D_2^\circ$ / $a^3D_2 - x^1D_2^\circ$
J	4024.109	(1)		24843.22	−10	$a^3G_3 - x^3F_2^\circ$	J	3976.615	4	IV	25139.93	00	$a^1P_1 - t^3D_2^\circ$
U	*4022.744	(1)		24851.65	{−05 / 00}	$z^5D_1^\circ - e^7F_2$ / $a^5D_3 - t^5D_4^\circ$	U	3976.562	(1)		25140.26	−01	$a^3D_3 - v^3F_3^\circ$
W	4022.45	(1)		24853.47	00	$a^3H_6 - w^5F_5^\circ$	U	3976.390	(1)		25141.35	+05	$c^3P_2 - z^1D_2^\circ$
I	4021.869	12	III	24857.06	−02	$a^3G_3 - z^3H_4^\circ$	U	3975.842	(1)		25144.82	+05	$z^5F_4^\circ - 2$
V	*4021.622	(1)		24858.59	{+10 / −10}	$z^5D_3^\circ - f^7D_2$ / $a^3P_1 - w^5D_1^\circ$	U	3975.21	(1)		25148.82	00	$z^7D_2^\circ - e^5D_3$
V	4020.490	(1)		24865.59	−01	$b^3D_3 - t^3G_4^\circ$	U	3974.764	(1)		25151.64	00	$a^5P_1 - x^5P_1^\circ$
U	4019.05	(1)		24874.50	−01	$b^3F_2 - x^5G_3^\circ$	J	3974.397	(1)		25153.96	−11	$z^5D_3^\circ - e^3D_3$
J	4018.282	(4)		24879.25	−10	$z^5D_2^\circ - e^5G_3$	J	3973.655	3	V	25158.66	−01	$a^1D_2 - x^1F_3^\circ$
J	4017.156	6	III	24886.22	−01	$a^1G_4 - v^3G_5^\circ$	U	3972.918	(1)		25163.32	00	$a^1H_5 - t^3G_5^\circ$
U	4017.093	(1)		24886.61	−07	$a^3G_3 - w^3D_2^\circ$	U	3971.82	(1)		25170.28	+02	$a^3G_3 - 1_2^\circ$
W	4016.54	(1)		24890.04	00	$a^3G_4 - x^3F_4^\circ$	J	3971.325	9	III	25173.42	−02	$a^5P_2 - x^5F_4^\circ$
U	4016.429	(2)		24890.73	−06	$z^5D_1^\circ - e^5G_2$	J	3970.391	4	IV	25179.34	+04	$c^3P_1 - w^3P_0^\circ$
B	4014.534	10	III	24902.48	+02	$a^1H_5 - y^1H_5^\circ$	J	3969.628	(1)		25184.18	+03	$a^3D_3 - 4_4^\circ$
W	*4014.28	(1)		24904.05	{+17 / −09}	$b^3G_3 - v^3D_2^\circ$ / $b^3G_3 - w^3F_3^\circ$	B	3969.261	30	II	25186.51	00	$a^5F_4 - y^5F_3^\circ$
J	4013.822	2	V	24906.89	+01	$c^3P_2 - v^3D_2^\circ$	J	3967.964	4n	IV	25194.74	−01	$z^5D_3^\circ - e^7G_4$
V	4013.798	(1)		24907.04	−11	$c^3P_2 - w^3F_3^\circ$	B	3967.423	8	IV	25198.17	+01	$b^3H_4 - u^3G_3^\circ$
J	4013.641	(2)		24908.02	−03	$z^5D_4^\circ - f^7D_4$	J	3966.824	(1)		25201.98	−09	$a^3D_2 - u^3G_3^\circ$
W	4012.16	(1)		24917.21	−03	$b^3H_6 - x^3H_6^\circ$	J	*3966.630	10n	IV	25203.21	{−03 / −10 / −03}	$z^5D_4^\circ - f^5F_5$ / $a^3G_5 - z^1G_4^\circ$ / $a^3D_2 - u^5F_2^\circ$
W	4011.71	(1)		24920.01	+04	$z^7D_2^\circ - e^5D_4$	V	*3966.532	(1n)		25203.83	{+07 / −21}	$a^1D_2 - v^3P_2^\circ$ / $z^5D_0^\circ - f^5F_1$
U	4011.412	(1)		24921.86	−02	$b^3F_4 - y^3G_3^\circ$	B	3966.066	10	III	25206.80	−01	$a^5F_2 - y^5D_3^\circ$
W	*4010.77	(1)		24925.85	{+13 / −11}	$z^7F_2^\circ - e^5F_2$ / $b^5F_2 - x^5G_2^\circ$	J	3965.511	(1)		25210.32	+01	$z^5D_3^\circ - g^5D_4$
W	4010.18	(1)		24929.51	+01	$b^3D_3 - 13_4^\circ$	U	3965.431	(1)		25210.83	−04	$a^3D_3 - 5^\circ$
I	4009.714	10	III	24932.41	−01	$a^5P_1 - x^5P_2^\circ$	J	3964.522	3	V	25216.61	−02	$b^3P_1 - v^5P_2^\circ$
J	4007.277	6	IV	24947.57	−04	$a^3G_3 - x^3F_2^\circ$	J	3963.108	6n	V	25225.61	−05	$z^5D_1^\circ - f^5F_2$
V	4007.233	(1gn)		24947.85	+09	$a^3P_2 - z^5H_3^\circ$	V	3962.353	(2)		25230.42	−03	$z^5D_2^\circ - e^7S_3$
V	4006.768	(1w)		24950.74	−19	$z^7F_0^\circ - e^5F_1$	J	3961.147	(2)		25238.10	00	$b^3P_0 - v^5P_1^\circ$
J	4006.631	2	IV	24951.60	−03	$c^3P_0 - w^3P_1^\circ$	J	3960.284	(1)		25243.60	+03	$b^3D_3 - t^3G_3^\circ$
J	4006.314	3	IV	24953.57	+01	$b^3H_5 - v^3F_4^\circ$	W	3957.62	(1)		25260.50	+02	$z^5D_1^\circ - e^3D_2$
B	4005.246	25	II	24960.23	00	$a^3F_3 - y^3F_2^\circ$	J	3957.027	4n	IV	25264.37	−07	$z^5D_2^\circ - f^5F_3$
J	*4004.976	(1)		24961.91	{+05 / +06}	$c^3P_2 - v^3D_1^\circ$ / $z^5D_4^\circ - f^7D_3$	B	3956.681	12	III	25266.58	−03	$a^3G_5 - z^3H_6^\circ$
J	4004.832	(1)		24962.81	−01	$b^3H_6 - x^3H_5^\circ$	J	3956.459	9	IV	25268.00	−01	$b^3H_6 - u^3G_5^\circ$
J	4003.764	2	V	24969.46	00	$a^1P_1 - u^3D_1^\circ$	J	3955.956	2	V	25271.21	+02	$c^3P_1 - w^3P_1^\circ$
V	*4002.665	(1)		24976.32	{−16 / +02}	$z^7F_1^\circ - e^5F_1$ / $a^3D_3 - v^3F_2^\circ$	J	3955.352	(3)	IV	25275.07	−07	$z^5D_1^\circ - f^5F_1$
J	4001.666	5	III	24982.55	00	$a^5P_3 - x^5P_3^\circ$	U	3954.715	(1)		25279.14	00	$b^3H_5 - 6_5^\circ$
J	4000.466	2	V	24990.05	−04	$b^3G_4 - w^3F_4^\circ$	U	3953.861	(1)		25284.60	−01	$b^3P_2 - v^5F_3^\circ$
J	4000.266	(1)		24991.30	−08	$z^5D_2^\circ - e^7F_2$	J	3953.156	4	IV	25289.11	−01	$b^3G_3 - v^3G_4^\circ$
W	4000.02	(1)		24992.83	−01	$b^3P_2 - w^5G_2^\circ$	U	3952.702	(1)		25292.02	−02	$b^3P_1 - v^5F_2^\circ$
I	**3998.054	10	III	25005.12	+04	$a^3G_5 - u^3D_4$	I	3952.606	8	IV	25292.63	−03	$a^3G_5 - z^3H_6^\circ$
I	3997.394	15	III	25009.25	−01	$a^3G_4 - z^3H_5^\circ$	I	3951.164	9	IV	25301.86	+02	$a^3D_1 - y^1D_2^\circ$
J	3996.968	2	V	25011.92	+06	$b^1G_4 - w^1G_4^\circ$	I	3949.954	10	III	25309.61	−01	$a^5P_2 - x^5P_2^\circ$
J	3995.996	4	IV	25018.00	−07	$a^3G_4 - w^3D_3^\circ$	I	3949.156	(1)		25314.73	−11	$a^1P_1 - 8_1^\circ$
J	3995.199	(1w)		25022.99	+12	$b^3H_5 - u^3G_4^\circ$	B	3948.779	10	IV	25317.14	+01	$b^3H_5 - u^3G_4^\circ$
J	3994.117	2	V	25029.77	+01	$a^1G_4 - y^3H_5^\circ$	J	3948.105	6n	IV	25321.47	−04	$z^5D_3^\circ - f^5F_4$
U	3992.395	(1)		25040.57	−01	$b^3H_4 - u^3G_4^\circ$	J	*3947.533	5	IV	25325.14	{+01 / −15}	$b^3P_2 - v^5P_2^\circ$ / $b^3G_5 - w^3F_4^\circ$
J	3990.379	2	V	25053.22	−01	$a^1G_4 - v^3G_4^\circ$	U	3947.391	(1)		25326.05	−07	$z^7D_5^\circ - e^5D_4$
J	3989.859	(2d)	V	25056.48	−04	$a^1D_2 - y^1F_3^\circ$	J	3947.002	4n	IV	25328.54	−05	$z^5D_4^\circ - e^7G_5$
							J	3945.119	4	IV	25340.63	+02	$a^3G_3 - w^5G_4^\circ$
							J	3944.890	3	IV	25342.10	+03	$b^3G_4 - v^3G_5^\circ$

TABLE B—(*Continued*)

Ref	λ I A	Int	T C	Wave Number Observed	o—c	Desig
J	3944.748	(2)		25343.02	—01	$b^3P_1 - v^5P_1^\circ$
J	3943.339	2	IV	25352.07	+04	$a^5P_2 - x^5P_1^\circ$
B	3942.443	6	IV	25357.83	—02	$b^3P_1 - x^3P_2^\circ$
J	3941.283	(3)		25365.29	—05	$z^5D_2^\circ - f^5F_2$
B	**3940.882	5	II	25367.87	—02	$a^5F_3 - y^5D_4^\circ$
V	3940.044	(1)		25373.27	—06	$a^1P_1 - v^3P_2^\circ$
J	3937.329	3	IV	25390.77	00	$a^3G_5 - z^3H_4^\circ$
B	3935.815	8	III	25400.53	—01	$b^3P_2 - v^5F_2^\circ$
					+27	$(z^5D_2^\circ - e^5D_2)$
U	3935.306	(2)		25403.82	+06	$b^3P_1 - v^5F_1^\circ$
J	*3933.606	(2)	IV	25414.80	—01	$c^3P_1 - w^3P_2^\circ$
					—03	$z^5D_2^\circ - f^5F_1$
					+01	$a^3D_1 - u^5F_2^\circ$
J	*3932.629	4	IV	25421.11	+05	$a^5G_4 - w^5G_5^\circ$
					—26	$(z^7D_2^\circ - e^5D_2)$
J	3931.122	(3)		25430.86	—01	$z^5D_2^\circ - g^5D_3$
B	3930.299	25R	I	25436.18	—01	$a^5D_2 - z^5D_3^\circ$
J	3929.208	(1)		25443.24	+05	$a^3D_3 - u^3G_4^\circ$
J	3929.114	(1)		25443.85	+02	$a^3G_3 - w^5G_2^\circ$
J	3928.085	(1)		25450.52	+02	$z^5D_4^\circ - g^5D_4$
B	3927.922	30R	I	25451.57	—01	$a^5D_1 - z^5D_2^\circ$
					+04	$(b^3P_2 - v^5P_1^\circ)$
V	3926.001	(1)		25464.03	+08	$z^5D_3^\circ - f^5F_3$
J	3925.946	6	IV	25464.38	+02	$b^3P_0 - x^3P_1^\circ$
J	3925.646	4	IV	25466.33	—02	$b^3P_2 - x^3P_2^\circ$
V	3925.201	(1)		25469.22	+01	$z^5D_0^\circ - e^5P_1$
B	3922.914	25R	I	25484.06	—01	$a^5D_3 - z^5D_4^\circ$
U	3921.27	(1)		25494.75	—03	$b^3F_4 - z^3I_5^\circ$
J	3920.839	(1)		25497.55	—02	$z^5D_2^\circ - e^5P_3$
U	3920.645	(1)		25498.81	—07	$z^7D_4^\circ - e^5D_3$
B	3920.260	20r	I	25501.32	00	$a^5D_0 - z^5D_1^\circ$
J	3919.069	3	IV	25509.07	00	$b^3G_4 - v^3G_4^\circ$
J	3918.644	6	IV	25511.83	+02	$b^3G_3 - v^3G_3^\circ$
J	3918.418	4	IV	25513.30	+04	$b^3P_1 - x^3P_0^\circ$
J	3918.319	3		25513.95	—02	$a^3P_0 - x^3D_1^\circ$
B	3917.185	8	II	25521.33	—02	$a^5F_2 - y^5D_3^\circ$
I	3916.733	6	IV	25524.28	00	$b^3H_6 - 6_5^\circ$
W	3914.73	(1)		25537.34	+25	$a^3D_3 - x^1D_2^\circ$
V	3914.273	(1)		25540.32	+01	$z^5D_1^\circ - e^5P_1$
J	3913.635	4	III	25544.48	00	$a^3P_2 - w^5D_3^\circ$
U	3911.699	(1)		25557.13	+04	$a^3D_2 - t^3D_1^\circ?$
SS	3911.005	(1)		25561.66	—04	$z^5D_4^\circ - f^5F_4$
J	3910.845	(3)	IV	25562.71	—01	$a^3G_3 - x^3G_4^\circ$
J	3909.830	3	III	25569.34	+05	$b^3P_1 - x^3P_1^\circ$
J	3909.664	(1)	V	25570.43	00	$z^5D_1^\circ - g^5D_2$
B	3907.937	4	IV	25581.73	—01	$a^3G_3 - w^5G_2^\circ$
J	3907.464	(1)	III	25584.83	+03	$a^3G_3 - x^3G_3^\circ$
J	3906.748	2	V	25589.52	—04	$a^3D_2 - t^3D_3^\circ$
B	3906.482	8	I	25591.26	00	$a^5D_1 - z^5D_1^\circ$
J	3903.902	5	IV	25608.17	—03	$b^3G_4 - y^3H_4^\circ$
B	**3902.948	20	II	25614.43	00	$a^3F_3 - y^3D_2^\circ$
J	3900.519	2	V	25630.38	00	$z^5D_3^\circ - g^5D_3$
B	3899.709	30R	I	25635.70	00	$a^5D_2 - z^5D_2^\circ$
J	3899.037	2	IV	25640.12	—06	$a^3H_4 - y^3G_4^\circ$
K	3898.012	10	II	25646.86	—01	$a^5F_1 - y^5D_2^\circ$
J	3897.896	8	IV	25647.62	00	$a^3G_5 - w^5G_5^\circ$
J	3897.449	(2)	IV	25650.57	+02	$b^3G_5 - y^3H_6^\circ$
B	3895.658	25r	I	25662.36	00	$a^5D_1 - z^5D_0^\circ$
SS	3895.450	(1)		25663.73	—10	$z^5D_0^\circ - g^5D_1$
U	3894.49	(1)		25670.06	—10	$z^5D_4^\circ - e^7S_3$
J	3894.005	(2)	III	25673.25	+02	$a^3D_2 - u^3D_2^\circ$
J	3893.924	(2)	IV	25673.79	—03	$a^3H_5 - y^3G_5^\circ$
I	3893.391	7	IV	25677.30	+03	$b^3G_5 - v^3G_5^\circ$
V	3893.316	(1)		25677.80	+01	$b^3P_3 - x^3P_1^\circ$
U	3892.98	(1)		25680.01	+01	$z^5D_2^\circ - e^5P_1$

Ref	λ I A	Int	T C	Wave Number Observed	o—c	Desig
U	3892.894	(1)		25680.58	00	$a^3G_3 - v^5F_4^\circ$
J	3891.928	3	V	25686.95	+01	$a^1P_1 - z^1P_1^\circ$
J	3890.844	2	IV	25694.11	—01	$a^3G_4 - w^5G_3^\circ$
U	3890.39	(1)		25697.11	+02	$z^5D_3^\circ - e^5P_3$
SSb	3889.931	(1)		25700.14	—09	$z^5D_2^\circ - e^3D_1$
V	3888.825	3	IV	25707.45	00	$c^3P_2 - w^3P_1^\circ$
B	3888.517	20	II	25709.49	00	$a^3F_2 - y^3D_2^\circ$
SS	3888.424	(1)		25710.10	—01	$z^5D_2^\circ - g^5D_2$
B	3887.051	15	I	25719.18	—01	$a^5F_4 - y^5D_4^\circ$
B	3886.284	40R	I	25724.26	00	$a^5D_3 - z^5D_3^\circ$
I	3885.512	5	III	25729.37	—03	$a^3P_1 - x^3D_2^\circ$
V	3885.154	(1)		25731.74	—02	$b^3G_4 - v^3G_3^\circ$
W	3884.66	(1)		25735.01	+07	$z^5D_1^\circ - g^5D_1$
J	3884.359	3	IV	25737.00	00	$a^3G_5 - z^1G_4^\circ$
J	3883.282	(4)		25744.14	+03	$a^3D_3 - u^3D_3^\circ$
U	3878.740	(2)		25774.29	—04	$a^3D_1 - t^3D_1^\circ?$
U	3878.676	(8)		25774.71	—04	$a^3H_4 - y^3G_3^\circ$
B	3878.575	100r	II	25775.39	00	$a^5D_2 - z^5D_1^\circ$
B	3878.021	60	II	25779.07	00	$a^5F_3 - y^5D_3^\circ$
W	3876.67	(1)		25788.05	+03	$a^3P_2 - w^5F_3^\circ$
J	3876.043	4	III	25792.22	—02	$a^5F_1 - z^3P_2^\circ$
V	3874.053	(1)		25805.47	+05	$a^3P_2 - w^5D_2^\circ$
B	3873.763	8	IV	25807.40	—02	$a^3H_5 - y^3G_4^\circ$
V	3872.923	1	IV	25813.00	—01	$a^3G_4 - x^3G_4^\circ$
B	3872.504	60	II	25815.79	—01	$a^5F_2 - y^5D_2^\circ$
J	3871.750	4	IV	25820.82	+02	$b^3G_5 - y^3H_5^\circ$
U	3869.609	(1)	IV	25835.11	+02	$a^3G_4 - x^3G_3^\circ$
K	3869.562	(2)	IV	25835.42	—04	$a^3G_4 - x^3G_5^\circ$
V	3868.243	(1)		25844.23	—04	$b^3G_5 - v^3G_4^\circ$
V	3867.925	1	IV	25846.36	+03	$b^3F_3 - u^5D_4^\circ$
B	3867.219	7	IV	25851.07	00	$c^3P_2 - w^3P_2^\circ$
B	3865.526	30	II	25862.40	00	$a^5F_1 - y^5D_1^\circ$
V	3863.745	2	IV	25874.32	+02	$a^3G_5 - w^5G_4^\circ$
U	3861.60	(1)		25888.69	—04	$a^3D_2 - u^3D_1^\circ$
J	*3861.341	2	IV	25890.42	+09	$a^3G_5 - v^5F_5^\circ$
					—05	$a^3D_1 - u^3D_2^\circ$
B	3859.913	300R	I	25900.01	+01	$a^5D_4 - z^5D_4^\circ$
I	3859.214	10	III	25904.69	+03	$a^3H_6 - y^3G_5^\circ$
B	3856.373	50r	IA	25923.78	00	$a^5D_3 - z^5D_2^\circ$
J	3855.846	(1w)		25927.32	+06	$z^5D_3^\circ - e^5P_3$
V	3855.329	(1w)		25930.80	—07	$a^3G_4 - v^5F_4^\circ$
U	3854.375	(1)		25937.22	—06	$z^5D_4^\circ - e^5P_3$
V	3853.462	(1)		25943.36	—04	$b^3G_5 - y^3H_4^\circ$
I	3852.574	6	IV	25949.34	+01	$a^5P_3 - w^5D_4^\circ$
B	3850.820	12	II	25961.16	—01	$a^5F_2 - z^3P_2^\circ$
B	3849.969	40	II	25966.90	00	$a^5F_1 - y^5D_0^\circ$
V	3846.949	(1)		25987.28	—03	$a^3H_5 - x^5G_6^\circ$
B	3846.803	8	IV	25988.27	+01	$a^3D_3 - t^3D_3^\circ$
J	3846.412	2	IV	25990.91	+07	$a^1H_5 - w^1G_4^\circ$
V	3846.001	(1w)		25993.69	00	$z^5F_4^\circ - f^5P_3$
J	3845.692	(1)		25995.78	+04	$a^1D_2 - t^3G_3^\circ$
K	3845.170	(5)		25999.30	—04	$a^3P_1 - x^3D_1^\circ$
B	3843.259	8	IV	26012.23	+03	$a^1G_4 - z^1F_3^\circ$
U	3842.975	(1)		26014.16	+10	$b^3F_3 - u^5D_2^\circ$
B	3841.051	80r	II	26027.19	00	$a^3F_2 - y^3D_1^\circ$
B	3840.439	80r	II	26031.33	00	$a^5F_2 - y^5D_1^\circ$
U	3839.630	(2w)		26036.82	+01	$z^2D_1^\circ - i^5D_2$
B	3839.259	7	IV	26039.33	00	$a^1G_4 - x^1G_4^\circ$
J	3837.132	1	IV	26053.77	+01	$b^3F_2 - x^3F_3^\circ$
I	3836.332	4	IV	26059.20	00	$a^3D_2 - t^3D_2^\circ$
B	3834.225	100r	II	26073.52	00	$a^5F_3 - y^5D_2^\circ$
J	3833.311	5	IV	26079.74	+03	$b^3F_4 - u^5D_4^\circ$
J	3830.850	1	IV	26096.49	+08	$a^3G_5 - x^3G_4^\circ$
J	3830.757	1	IV	26097.12	00	$b^3F_2 - w^3D_2^\circ$
U	3829.771	(2)		26103.84	—05	$b^3F_4 - u^5D_3^\circ$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Observed	o−c	Desig	Ref	λ I A	Int	T C	Observed	o−c	Desig
V	*3829.458	1	IV	26105.98	+01	$a^3D_1 - u^3D_1^\circ$	J	3786.678	8	III	26400.90	−02	$a^5F_1 - z^3P_0^\circ$
					−09	$b^3P_1 - 2_2^\circ$	J	**3786.176	4	IV	26404.40	+08	$b^3P_2 - v^3D_2^\circ$
J	3829.125	(1)		26108.25	−01	$b^1G_4 - s^3G_5^\circ$	G	3785.950	6	IV	26405.98	+04	$a^3H_5 - z^3I_6^\circ$
V	3828.510	(1n)		26112.44	−02	$a^3G_3 - w^3G_4^\circ$	J	3785.706	(1)		26407.68	+04	$b^3H_6 - y^3I_6^\circ$
B	3827.825	75r	II	26117.11	00	$a^3F_3 - y^3D_2^\circ$	J	3782.608	(1)		26429.31	+04	$c^3P_1 - v^3F_2^\circ$
J	3820.572	1	IV	26118.84	−01	$a^3G_5 - x^3G_5^\circ$	J	3782.450	1	IV	26430.41	−02	$z^7P_3^\circ - e^7P_3$
J	3826.836	1	IV	26123.86	+06	$a^3G_4 - v^5F_3^\circ$	J	3781.938	(1)		26433.99	+05	$b^3D_2 - w^1F_2^\circ$
B	3825.884	200R	II	26130.36	−01	$a^5F_4 - y^5D_3^\circ$	J	3781.188	2	IV	26439.23	+01	$a^5P_2 - w^5F_2^\circ$
J	3825.404	(1)		26133.64	00	$a^3P_2 - y^5S_2^\circ$	J	3779.486	2	IV	26451.14	+13	$a^5P_1 - w^5F_1^\circ$
B	3824.444	50r	IA	26140.20	+01	$a^5D_4 - z^5D_3^\circ$	V	3779.444	(2n)	IV{	26451.43	+08	$a^3D_1 - 8_1^\circ$
V	3824.306	2	IV?	26141.14	00	$b^3H_4 - w^3H_4^\circ$	V	3779.424	(1)		26451.57	−06	$b^3F_4 - x^3F_4^\circ$
J	3824.074	1	IV	26142.73	+01	$b^3F_3 - w^3D_3^\circ$	U	3779.213	(1)		26453.05	−06	$a^3G_3 - y^1G_4^\circ$
J	3821.834	3	IV	26158.05	00	$b^3F_2 - x^3F_2^\circ$	J	3778.697	(1)		26456.66	+04	$a^5P_2 - w^5D_2^\circ$
I	3821.181	10	IV	26162.52	+02	$b^3H_5 - y^3I_6^\circ$	J	3778.509	4	IV	26457.98	+08	$a^3D_3 - t^3D_2^\circ$
I	3820.428	250R	II	26167.68	00	$a^5F_5 - y^5D_4^\circ$	U	3778.320	(1)		26459.30	00	$b^3P_2 - v^3D_1^\circ$
U	3817.650	3n	IV	26186.72	00	$z^5F_5^\circ - g^5F_5$	J	3777.448	2	IV	26465.41	+01	$b^3F_4 - z^3H_4^\circ$
J	3816.340	4	IV	26195.71	+03	$a^5P_2 - w^5D_3^\circ$	J	3777.061	(1)		26468.12	+08	$b^3G_4 - z^1F_3^\circ$
B	3815.842	100r	II	26199.13	+01	$a^3F_4 - y^3D_3^\circ$	G	3776.454	6	IV	26472.38	+04	$a^5P_3 - w^5F_4^\circ$
J	3814.526	5	IIIA	26208.17	+01	$a^5F_1 - z^3P_1^\circ$	J	3775.860	(1)		26476.54	−03	$a^3G_4 - w^3G_3^\circ$
V	3813.891	2	V	26212.53	−01	$a^1I_6 - x^1H_5^\circ$	G	3774.823	5	IV	26483.81	+04	$a^5P_1 - w^5D_1^\circ$
J	3813.638	2	IV	26214.27	00	$a^3G_5 - v^5F_4^\circ$	J	3773.699	1	IV	26491.70	−06	$z^7P_2^\circ - f^7D_2$
J	3813.059	5?	IV	26218.25	−01	$b^3F_3 - x^3F_3^\circ$	V	3773.364	(1)		26494.05	−03	$a^1G_4 - x^3H_5^\circ$
					+10	$(a^3H_6 - x^5G_6^\circ)$	V	3770.405	} 3	{IV	26514.84	−04	$a^3H_5 - z^3I_5^\circ$
G	3812.964	40	II	26218.92	+03	$a^5F_3 - z^3P_2^\circ$	V	3770.305		{IV	26515.55	−01	$a^3G_5 - w^3G_5^\circ$
J	3811.892	2	IV	26226.27	−01	$a^3G_3 - w^3G_3^\circ$	V	3769.995	4	IV	26517.73	−06	$z^7P_3^\circ - f^5D_2$
U	*3811.05	(1)		26232.07	+05	$b^3F_3 - z^3H_4^\circ$	W	3768.23	(1)		26530.15	−09	$b^3P_1 - z^1D_2^\circ$
					−09	$a^3G_4 - w^3G_5^\circ$	J	3768.030	3	IV	26531.56	+01	$a^5P_1 - w^5D_0^\circ$
J	3810.759	2	IV	26234.07	−04	$a^3D_2 - 8_1^\circ$	B	3767.194	80r	II	26537.44	−01	$a^5F_1 - y^5F_1^\circ$
V	3809.043	(1)		26245.89	+02	$b^3P_0 - v^3D_1^\circ$	V	3766.665	1	IV	26541.17	00	$z^7P_2^\circ - f^7D_1$
J	3808.731	4	IV	26248.04	−02	$b^3F_4 - x^3F_4^\circ$	V	3766.092	(1)		26545.21	+01	$b^3F_3 - 1_2^\circ$
J	3808.286	(1)		26251.11	+02	$c^3P_2 - z^1F_3^\circ$	W	3765.70	(1)		26547.97	00	$b^3H_5 - y^3I_5^\circ$
G	3807.534	7	III	26256.31	+08	$a^5P_1 - w^5D_2^\circ$	B	3765.542	20	IV	26549.09	00	$b^3H_6 - y^3I_7^\circ$
G	3806.697	10	III	26262.08	+09	$b^3H_5 - w^3H_5^\circ$	B	3763.790	100r	II	26561.44	00	$a^5F_2 - y^5F_2^\circ$
					+46	$(b^3F_3 - w^3D_3^\circ)$	V	3762.205	(1)		26572.63	−02	$z^5F_4^\circ - e^5G_5$
J	3806.203	2	IV	26265.47	+10	$a^1P_1 - v^3P_1^\circ$	J	3761.416	1	IV	26578.21	−04	$b^3F_3 - z^1G_4^\circ$
B	3805.345	12	IV	26271.40	−02	$b^3H_4 - y^1I_5^\circ$	G	3760.534	6	III	26584.44	−01	$a^5P_1 - y^5S_2^\circ$
J	3804.013	(2)		26280.59	+02	$z^5F_5^\circ - h^5D_4$	B	3760.052	8	III	26587.85	+01	$a^3H_6 - z^3I_7^\circ$
J	3802.283	(1)		26292.55	−05	$a^3D_2 - v^3P_2^\circ$	V	3759.155	(1)		26594.20	+02	$a^1I_6 - s^3G_5^\circ$
J	3801.975	(2w)		26294.68	+03	$z^5F_5^\circ - f^5G_6$	B	3758.235	150R	II	26600.70	00	$a^5F_3 - y^5F_3^\circ$
J	3801.804	1	IV	26295.86	+04	$b^3P_1 - v^3D_2^\circ$	J	3757.459	1	IV	26606.20	−01	$a^3D_2 - z^1P_1^\circ$
J	3801.681	3	IV	26296.71	−01	$b^3P_2 - v^3D_3^\circ$	J	3756.939	4	IV	26609.88	−03	$a^1H_5 - v^3H_5^\circ$
B	3799.549	50	II	26311.47	00	$a^5F_3 - y^5F_4^\circ$	J	3756.069	1	IVA	26616.04	+01	$a^5P_3 - w^5F_3^\circ$
B	3798.513	40	II	26318.65	+01	$a^5F_4 - y^5F_5^\circ$	J	3754.506	1	IV	26627.12	−06	$z^7P_3^\circ - f^7D_4$
J	3797.948	(1)		26322.56	+01	$b^3F_2 - x^3F_2^\circ$	G	**3753.610	8	III	26633.48	+05	$a^5P_3 - w^5D_2^\circ$
B	3797.517	12	III	26325.55	+03	$b^3H_6 - w^3H_6^\circ$	J	3753.154	(1gn)		26636.71	−07	$a^3H_6 - z^3I_6^\circ$
U	3796.90	(1)		26329.83	−12	$a^3D_2 - s^3D_3^\circ$	J	*3752.420	(1w)		26641.92	−02	$z^7P_2^\circ - c^7F_3$
U	3796.00	(1)		26336.07	+09	$a^3H_6 - x^5G_5^\circ$						−04	$z^7P_2^\circ - e^5S_2$
B	3795.004	60	II	26342.98	00	$a^5F_2 - y^5F_3^\circ$	J	3751.820	(1)		26646.19	+04	$a^3G_5 - w^3G_4^\circ$
J	3794.340	8	III	26347.59	−05	$a^3H_4 - z^3I_5^\circ$	J	3751.059	(1)		26651.59	+05	$a^3D_1 - s^3D_2^\circ$
J	3793.872	1	IV	26350.84	+04	$b^3P_1 - v^3D_1^\circ$	V	3750.677	(1)		26654.31	+04	$b^3F_2 - w^5G_3^\circ$
J	3793.478	(1)		26353.58	+02	$z^7P_3^\circ - f^5D_3$	B	3749.487	200R	II	26662.76	−01	$a^5F_4 - y^5F_4^\circ$
U	3793.360	1	IV	26354.40	+01	$z^7P_2^\circ - e^7P_2$	J	3748.969	5	IV	26666.45	00	$z^7P_4^\circ - f^7D_5$
U	3792.833	1	IV	26358.06	−01	$a^5P_1 - w^5F_2^\circ$	V	§3748.492	7	IV?	26669.84	+01	$a^1H_5 - v^3H_6^\circ$
J	3792.156	2	IV	26362.77	+02	$a^3G_4 - w^3G_4^\circ$	B	3748.264	60R	IA	26671.46	−01	$a^5D_1 - z^5F_2^\circ$
U	3791.73	(1)		26365.73	+07	$z^5F_2^\circ - f^5P_1$	J	3746.931	6	IV	26680.95	−02	$z^7P_3^\circ - f^7D_3$
J	3791.504	(1)		26367.30	+02	$b^3F_4 - z^3H_5^\circ$	J	3745.486	1	IV	26684.12	−04	$a^5P_2 - w^5D_1^\circ$
J	*3790.756	1	IVA	26372.50	+01	$a^5P_3 - w^5D_3^\circ$	J	3745.901	40r	IA	26688.29	00	$a^5D_0 - z^5F_1^\circ$
					−08	$a^3P_0 - w^5P_1^\circ$	J	3745.561	100R	I	26690.71	+01	$a^5D_2 - z^5F_3^\circ$
J	3790.656	(1)		26373.20	−02	$z^7P_2^\circ - f^5D_1$	J	3744.105	4	IV	26701.09	−02	$z^7P_2^\circ - e^7F_1$
B	3790.095	12	II	26377.10	00	$a^5F_2 - z^2P_1^\circ$	SS	3743.781	(0)		26703.40	00	$a^3G_4 - y^1G_4^\circ$
					+100	$(b^3F_4 - w^3D_3^\circ)$	J	3743.468	6	IV?	26705.63	+03	$a^1H_5 - x^1H_5^\circ$
J	3789.570	(1)		26380.75	+05	$b^3F_2 - 1_2^\circ$	G	3743.364	20	IIA	26706.38	00	$a^5F_2 - y^5F_1^\circ$
J	3789.178	3	IV	26383.48	+02	$a^3G_4 - z^1H_5^\circ$	V	3742.937	(0)		26709.42	+06	$z^5F_1^\circ - f^5G_2$
B	3787.883	50	II	26392.50	−01	$a^5F_1 - y^5F_2^\circ$	J	3742.621	4	IV	26711.68	−04	$z^7P_4^\circ - f^5D_4$
J	3787.164	(1)		26397.51	00	$b^3D_2 - w^1D_2^\circ$	W	3742.07	(1)		26715.61	+06	$b^3F_3 - w^5G_4^\circ$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Observed	o-c	Desig
J	3740.247	3	IV	26728.63	-02	$a^3D_3 - s^3D_3°$
V	*3740.061	(1)		26729.96	+04	$z^5F_3° - g^7D_4$
					00	$a^1G_4 - v^3F_4°$
V	3739.317	1	IV	26735.28	+01	$a^5P_3 - w^5F_2°$
J	3739.120	1	IV	26736.69	-03	$a^5P_1 - v^5D_2°$
B	3738.308	10	IV	26742.49	-02	$b^5H_5 - z^1I_6°$
B	3737.133	150R	I	26750.90	00	$a^5D_3 - z^5F_4°$
J	3735.325	6	IV	26763.85	00	$z^7P_4° - e^7P_4$
B	3734.867	300r	II	26767.13	-01	$a^5F_5 - y^5F_5°$
B	3733.319	40r	IA	26778.23	00	$a^5D_1 - z^5F_1°$
B	3732.399	10	III	26784.83	-01	$a^5P_2 - y^5S_2°$
J	3731.374	2	IV	26792.19	+01	$b^3F_2 - w^5G_2°$
J	3730.945	2	IV	26795.27	+03	$a^5G_3 - x^5G_3°$
G	3730.386	3	IV	26799.28	+01	$a^1G_4 - u^3G_5°$
J	3728.668	1	IV	26811.63	00	$b^3F_4 - z^1G_4°$
J	3727.809	3	IV	26817.81	00	$z^7P_3° - f^7D_2$
B	3727.621	50r	II	26819.16	00	$a^5F_3 - y^5F_2°$
J	3727.096	4	IV	26822.94	-03	$z^7P_4° - f^5D_3$
J	3726.927	6	IV	26824.16	00	$z^7P_2° - e^7F_2$
					-26	$(a^3P_2 - v^5D_3°)$
J	3725.498	(1)		26834.45	-04	$a^1G_4 - 4_4°$
B	3724.380	8	III	26842.50	-02	$a^5P_2 - x^3D_3°$
B	3722.564	50r	IA	26855.59	-01	$a^5D_2 - z^5F_2°$
J	3722.028	(1)		26859.46	-02	$a^3G_3 - w^3F_4°$
V	3721.606	(1)		26862.51	-02	$b^3G_3 - v^3F_2°$
U	3721.510	2	IV	26863.20	-06	$z^7P_2° - e^5G_2$
V	3721.396	1	IV	26864.02	-01	$a^5P_0 - y^5P_1°$
V	*3721.278	2	IV	26864.87	-06	$z^5F_5° - e^3G_5$
					-05	$a^5P_3 - v^5D_4°$
V	3721.189	(1)		26865.50	-01	$c^3P_2 - v^3F_2°$
B	3719.935	250R	I	26874.57	+01	$a^5D_4 - z^5F_5°$
J	3718.407	3	IV	26885.62	00	$a^3G_3 - v^3D_3°$
G	*3716.442	12	IV	26899.83	-01	$z^7P_4° - e^7P_3$
					+10	$z^5F_4° - e^3G_4$
G	3715.911	4	IV	26903.68	+01	$a^5P_2 - x^3D_2°$
J	3711.411	2	IV	26936.29	+02	$c^3P_1 - y^1D_2°$
J	3711.225	3	IV	26937.65	-01	$b^3F_3 - x^3G_4°$
U	3709.665	(1)		26948.97	+04	$b^3F_4 - w^5G_4°$
J	3709.535	(1)		26949.92	00	$b^3G_4 - x^3H_5°$
G	3709.246	75r	II	26952.02	+02	$a^5F_4 - y^5F_3°$
V	*3708.602	(1)		26956.70	-05	$a^3H_4 - u^5D_3°$
					+02	$b^3F_3 - w^5G_2°$
G	3707.918	8	III	26961.67	+02	$a^5P_3 - y^5S_2°$
U	3707.824	20	I	26962.35	-01	$a^5D_2 - z^5F_1°$
I	*3707.048	8	IV	26968.00	+01	$z^7P_3° - e^7F_3$
					-02	$z^7P_3° - e^5S_2$
B	3705.567	100r	I	26978.77	00	$a^5D_3 - z^5F_3°$
B	3704.463	10	IV	26986.81	+01	$a^3G_5 - y^1G_4°$
V	3704.336	(1)		26987.74	+09	$b^3H_6 - z^1I_6°$
U	3704.021	(1)		26990.04	-02	$c^3P_1 - x^1D_2°$
J	3703.824	3	IV	26991.47	+01	$b^3P_0 - w^3P_1°$
J	3703.697	3	IV	26992.40	-04	$z^7P_4° - e^5G_5$
J	**3703.556	5	IV?	26993.42	-07	$a^3G_3 - w^3F_3°$
					+20	$a^5G_3 - v^3D_2°$
J	*3702.500	1	IVA	27001.12	-19	$a^3F_2 - x^5D_3°$
					-11	$a^5P_3 - v^5D_2°$
J	3702.033	3	IV	27004.53	+03	$b^3P_1 - w^3P_0°$
G	3701.086	20	IV	27011.44	00	$z^7P_3° - e^7F_4$
J	3699.147	1	IV	27025.60	-06	$c^3P_2 - t^5D_3°$
J	3698.611	2	IV	27029.51	+01	$c^3P_2 - w^3F_3°$
U	3697.536	(1w)		27037.37	-03	$a^3D_2 - y^1F_3°$
G	3697.426	6n	IV	27038.18	00	$z^7P_3° - e^5G_3$
U	3696.03	(1)		27048.39	00	$a^3P_1 - z^3S_1°$
V	*3695.507	(1)		27052.21	+07	$b^3F_4 - w^5G_2°$
					+09	$z^5F_2° - g^7D_2$
B	*3695.054	8	IV	27055.53	+01	$b^3F_3 - v^5F_4°$
					-01	$a^1G_4 - 6_5°$
G	3694.005	20	IV	27063.21	-02	$z^7P_2 - e^7S_3$
J	3693.008	1	IV	27070.52	+14	$b^3G_3 - 4_4°$
J	3690.730	4	IV	27087.23	-01	$a^1H_5 - s^3G_5°$
V	*3690.450	(1)		27089.29	+09	$c^3P_0 - t^3D_1°?$
					-04	$z^5D_1° - f^5P_2$
S	3690.095	(—)		27091.89	-22	$b^3F_3 - v^5P_3°$
V	3689.897	(1w)		27093.34	-19	$a^1G_4 - u^3G_4°$
G	*3689.457	12	IV	27096.58	-01	$z^7P_4° - f^7D_4$
					+19	$b^3P_1 - w^3P_1°$
V	3688.877	(1)		27100.84	-09	$a^3H_4 - x^3F_4°$
V	3688.476	(1w)		27103.78	-06	$a^3D_3 - 9_4°$
J	3687.656	4	III	27109.81	+04	$a^3G_4 - w^3F_4°$
B	3687.458	40r	I	27111.27	+01	$a^5F_5 - y^5F_4°$
J	3687.100	2	IV	27113.90	-02	$a^5P_3 - v^5D_2°$
J	3686.260	2	IV	27120.07	-01	$a^3P_1 - y^3P_0°$
G	3685.998	15n	IV	27122.01	-01	$z^7P_4° - e^7F_5$
G	3684.108	15	IV	27135.91	00	$a^3G_4 - v^3D_3°$
V	*3683.616	(1)		27139.54	+15	$a^3P_0 - u^5D_1°$
					-01	$a^3D_2 - x^1F_3°$
G	3683.054	10	IA	27143.68	+02	$a^5D_3 - z^5F_2°$
J	3682.226	20	IV	27149.78	+10	$a^1D_2 - w^1D_2°$
U	3681.88	(1)		27152.34	+03	$b^1G_4 - v^1G_4°$
U	3681.651	(1)		27154.03	-03	$z^7P_3° - e^7G_1$
B	3680.675	2n	IV	27161.23	-05	$z^5D_4° - g^5F_5$
B	3679.915	40r	IA	27166.83	-01	$a^5D_1 - z^5F_4°$
W	*3679.53	(1)		27169.68	+05	$z^7P_3° - g^5D_4$
					-02	$c^3P_1 - t^5D_0°$
W	3679.33	(1)		27171.15	+11	$b^3F_4 - x^3G_4°$
W	3678.98	(1)		27173.74	+12	$a^3P_2 - x^3D_1°$
J	3678.863	3	IV	27174.60	-04	$a^3P_1 - y^3P_2°$
B	3677.630	12	IV	27183.71	-01	$a^3G_3 - w^3F_2°$
V	3677.477	(2)		27184.85	+04	$a^5P_2 - y^3G_3°$
J	3677.309	2	IV	27186.09	-02	$a^1D_2 - w^1F_3°$
J	3676.879	(1)		27189.27	-04	$z^7P_3° - e^5G_2$
V	3676.314	6	IV	27193.44	-04	$b^3F_4 - x^3G_3°$
B	3674.766	2	IV	27204.90	+01	$b^3P_2 - w^3P_1°$
J	3672.722	1	IV	27220.04	-11	$a^3H_4 - z^3H_5°$
U	3671.51	(1)		27229.02	+01	$z^5D_2° - f^5P_2$
W	3670.810	1	IV	27234.22	-02	$a^3P_0 - w^3D_1°$
V	3670.071	3	IV	27239.70	+16	$b^3G_5 - x^3H_6°$
J	3670.028	3	IV	27240.02	+01	$b^3P_1 - w^3P_2°$
U	3669.523	10	IV	27243.77	-01	$a^3G_4 - w^3F_3°$
B	3669.151	3	IV	27246.53	+08	$b^3G_4 - v^3F_3°$
J	3668.893	(1)		27248.45	00	$b^3F_2 - v^3F_3°$
U	3668.6	(1)		27250.6	-3	$b^3F_2 - v^5P_1°?$
W	3668.214	(1)		27253.49	-03	$z^5D_3° - g^5F_4$
U	*3667.999	1	IV	27255.09	-04	$z^5D_1° - h^5D_1$
					-02	$b^3G_4 - u^3G_5°$
G	3667.252	3n	IV	27260.64	+11	$z^5D_4° - f^5P_3$
U	3666.944	(1)		27262.93	+14	$a^3F_2 - x^5D_2°$
W	*3666.24	1	IV	27268.17	00	$a^3H_5 - x^3F_4°$
					+01	$z^7P_4° - e^5G_4$
U	3664.694	(1)		27279.67	+02	$z^7P_3° - e^7G_3$
G	3664.537	2	IV	27280.83	00	$z^7P_3° - f^5F_4$
W	3663.95	(1)		27285.21	+09	$b^3G_5 - x^3H_5°$
V	*3663.458	1	IV	27288.87	-05	$b^3F_2 - w^5P_2°$
					-03	$b^3F_4 - v^5P_2°$
W	3663.25	(1)		27290.42	+09	$b^3G_4 - 4_4°$
W	3661.36	(1)		27304.50	00	$a^3H_4 - x^3F_3°$
W	3660.33	(1)		27312.19	-05	$z^7F_3° - f^5D_4$
G	3659.516	8	IV	27318.27	+01	$a^3H_4 - z^3H_4°$
U	3658.55	(1)		27325.48	-01	$b^3F_4 - v^5P_3°$
W	3657.89	1	IV	27330.41	+06	$z^7P_2° - e^5P_3$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Wave Number Observed	o −c	Desig
U	3657.139	1	IV	27336.02	−07	$a^3P_1 - u^5D_2^\circ$
J	3655.465	4	IV	27348.54	+03	$b^3P_2 - w^3P_2^\circ$
W	3654.66	(1)		27354.56	+08	$a^5P_1 - x^3D_2^\circ$
V	3653.763	1	IV	27361.28	−07	$a^3H_5 - z^3H_6^\circ$
B	3651.469	20	IV	27378.47	+01	$a^3G_3 - v^3G_4^\circ$
W	*3651.10	(1)		27381.23	{ 00 / +14	$z^7F_4^\circ - f^7D_5$ / $a^3D_2 - 11_3^\circ$
J	3650.280	5	IV	27387.38	−01	$a^3H_5 - z^3H_5^\circ$
J	3650.031	4	IV	27389.25	−03	$z^7P_3^\circ - e^7S_3$
B	3649.508	12	IV	27393.18	+01	$a^3G_5 - w^3F_4^\circ$
J	3649.304	5	I A	27394.71	+01	$a^5D_4 - z^5F_3^\circ$
B	3647.844	100R	I	27405.67	00	$a^5F_4 - z^5G_5^\circ$
J	3647.427	3	IV	27408.81	−12	$a^3F_3 - x^3D_3^\circ$
J	3645.822	6	IV	27420.87	+03	$c^3P_0 - u^3D_1^\circ$
V	*3645.494	1	IV	27423.34	{ −15 / +02 / +07	$z^7F_3^\circ - f^5D_3$ / $b^3G_3 - x^1D_2^\circ$ / $z^7P_3^\circ - f^5F_3$
V	*3645.090	2	IV	27426.38	{ −12 / +06	$z^7F_4^\circ - f^5D_4$ / $c^3P_2 - x^1D_2^\circ$
U	3644.798	(1)		27428.58	+05	$z^5D_3^\circ - f^5P_2$
SS	*3643.812	(1)		27435.99	{ +02 / −11	$a^5F_2 - x^5D_1^\circ$ / $a^3D_3 - y^1F_3^\circ$
V	3643.716	1	IV	27436.72	00	$b^3F_2 - w^3G_3^\circ$
J	3643.627	2	IV	27437.39	−01	$z^7P_4^\circ - e^7F_3$
G	3640.388	15	IV	27461.80	+05	$a^3G_4 - v^3G_5^\circ$
G	3638.296	12	IV	27477.59	−01	$a^3G_3 - y^3H_4^\circ$
J	3637.862	3n	IV	27480.87	+02	$z^7P_4^\circ - e^7F_4$
W	3637.73	(1)		27481.87	+04	$b^3F_4 - v^3F_3^\circ$
V	3637.251	1	IV	27485.49	−02	$a^3H_5 - z^3H_4^\circ$
J	3636.995	2	IV	27487.42	+02	$b^3F_3 - w^3G_4^\circ$
V	3636.650	1	IV	27490.03	+03	$c^3P_2 - u^3G_3^\circ$
U	3636.234	(1)		27493.17	−07	$a^1D_2 - s^3G_3^\circ$
V	*3636.186	2	IV	27493.54	{ −18 / −17	$a^5P_2 - x^3D_3^\circ$ / $z^5D_4^\circ - g^5F_4$
W	3635.19	2	IVA	27501.07	00	$c^3P_2 - t^3D_1^\circ$
G	3634.326	6n	IV	27507.61	+02	$z^7P_4^\circ - e^5G_3$
U	3633.833	1	IV	27511.34	−04	$b^3G_4 - 6_5^\circ$
SS	3633.077	(1)		27517.06	−07	$z^7P_4^\circ - e^7G_5$
J	3632.979	3	IV	27517.80	+03	$a^3P_0 - y^3S_1^\circ$
J	3632.558	3	IV	27521.00	00	$b^3G_5 - v^3F_4^\circ$
J	3632.042	10	IV	27524.90	+10	$c^3P_1 - u^3D_2^\circ$
B	3631.464	125R	I	27529.28	+01	$a^5F_3 - z^5G_4^\circ$
J	3631.103	7	IV	27532.02	−02	$z^7F_5^\circ - f^7D_5$
J	3630.353	4	IV	27537.71	−04	$z^7F_4^\circ - f^5D_3$
V	3628.094	1	IV	27554.85	−02	$a^5P_2 - x^3D_2^\circ$
U	3627.06	(1)		27562.71	00	$a^1H_5 - u^3H_5^\circ$
G	3625.140	6	IV	27577.31	+01	$z^7F_5^* - f^5D_4$
U	3624.31	(1)		27583.62	−03	$a^3P_1 - w^3D_2^\circ$
U	3623.772	2	IV	27587.72	00	$z^7F_3^\circ - f^5D_2$
G	*3623.440	1	IV	27590.24	{ +05 / −07	$b^3F_4 - w^3G_5^\circ$ / $b^3G_5 - u^3G_5^\circ$
G	3623.187	8	IV	27592.17	−02	$a^3H_6 - z^3H_6^\circ$
G	3622.001	12	IV	27601.21	+06	$a^3G_3 - v^3G_3^\circ$
V	3621.718	(2)		27603.36	+01	$a^1H_5 - u^3H_4^\circ$
B	3621.463	15	IV	27605.30	+02	$a^3G_4 - y^3H_5^\circ$
U	3620.228	(1)		27614.72	+10	$z^7F_4^\circ - e^7P_3$
U	3619.772	(1)		27618.20	−03	$a^3H_6 - z^3H_5^\circ$
B	3618.769	125R	I	27625.86	+01	$a^5F_2 - z^5G_3^\circ$
J	*3618.392	2	IV	27628.74	{ −01 / −09	$a^3G_4 - v^3G_4^\circ$ / $z^5D_3^\circ - f^5G_4$
B	3617.788	12	IV	27633.35	+01	$c^3P_2 - u^3D_3^\circ$
W	3617.09	(1)		27638.68	+08	$a^1G_4 - t^3D_3^\circ$
U	3616.326	(1)		27644.52	−06	$a^3P_1 - x^3F_2^\circ$
SS	3616.157	(1)		27645.81	−07	$z^5D_4^\circ - h^5D_3$
U	3615.665	(1)		27649.57	00	$a^3F_4 - x^3D_4^\circ$

Ref	λ I A	Int	T C	Wave Number Observed	o −c	Desig
W	3615.19	(1)		27653.21	+12	$z^5D_1^\circ - h^5D_1$
W	3613.15	(1)		27668.82	+01	$z^7F_2^\circ - e^7P_2$
J	*3612.940	1	IVA	27670.43	{ +02 / −10	$a^3F_3 - x^5D_2^\circ$ / $a^5P_3 - x^3D_3^\circ$
G	3612.068	8	IV	27677.11	+05	$z^7F_5^\circ - e^5G_6$
J	3610.703	2	IV	27687.57	−07	$z^7F_3^\circ - f^5D_1$
G	3610.159	20	III	27691.75	00	$z^7F_6^\circ - e^7F_6^\circ$
B	3608.861	100r	I	27701.70	00	$a^5F_1 - z^5G_2$
J	*3608.146	3	IV	27707.19	{ −04 / +24	$z^7F_4^\circ - e^5G_5$ / $b^3G_4 - u^3G_3^\circ$
G	3606.679	20	III	27718.46	+03	$a^3G_5 - y^3H_6^\circ$
G	**3605.450	15	IV	27727.91	{ +02 / +42	$a^3G_4 - y^3H_4^\circ$ / $(z^7F_6^\circ - f^7D_5)$
U	3604.383	(1)		27736.12	−05	$z^7F_1^\circ - f^5D_0$
J	3603.828	1	IV	27740.39	−01	$c^3P_1 - u^3D_1^\circ$
U	3603.572	(1)		27742.36	+01	$a^3H_5 - w^5G_6^\circ$
G	3603.205	10	IV	27745.18	+03	$a^3G_5 - v^3G_5^\circ$
G	*3602.534	3	IV	27750.36	{ −01 / +12	$z^7F_3^\circ - e^7P_2$ / $z^7P_4^\circ - f^5F_4$
U	3602.46	2	IV	27750.92	+02	$z^7F_3^\circ - f^7D_3$
U	3602.08	1	IVA	27753.85	+01	$z^7F_1^\circ - f^7D_2$
G	3599.624	3	IV	27772.79	+01	$a^1H_5 - u^3F_4^\circ$
U	3598.98	(1)		27777.75	+04	$z^7F_0^\circ - f^7D_1$
W	3598.93?	(1)		27778.14	+01	$z^5D_1^\circ - g^5F_2$
U	3598.721	1	IVA	27779.75	−04	$a^3D_3 - 11_3^\circ$
W	3597.05	3n	IV	27792.66	−11	$z^5D_2^\circ - h^5D_1$
U	3596.198	1	IV	27799.24	+05	$a^3H_5 - w^5G_6^\circ$
U	3595.857	(1)		27801.88	+09	$a^3H_4 - w^5G_4^\circ$
U	3595.66	(1)		27803.40	+15	$z^7F_1^\circ - f^7D_1$
U	3595.308	2	IV	27806.12	−06	$z^7F_2^\circ - f^7D_2$
G	3594.632	8	IV	27811.35	−02	$z^7F_4^\circ - f^7D_4$
U	3593.329	(1)		27821.44	−03	$z^5D_2^\circ - f^5G_3$
U	3592.881	(1)		27824.91	+09	$a^5P_2 - x^3D_1^\circ$
W	3592.68	(1)		27826.46	−07	$z^5D_3^\circ - h^5D_2$
U	3592.486	(1)		27827.96	−09	$b^3F_3 - y^1G_4^\circ$
U	3591.485	(1)		27835.72	+06	$z^5D_0^\circ - g^5F_1$
U	3591.345	(1)		27836.80	00	$z^7F_4^\circ - e^7F_5$
W	3590.99	(1)		27839.56	+07	$z^5D_4^\circ - e^3G_5$
W	3590.66	(1)		27842.12	+02	$b^1G_4 - t^3F_3^\circ$
U	3590.086	(1)		27846.57	−01	$b^3G_5 - 6_5^\circ$
G	3589.456	3	IV	27851.46	+02	$a^3G_4 - v^3G_3^\circ$
B	3589.107	8	III	27854.16	−01	$a^5F_5 - z^5G_5^\circ$
J	3588.918	2	IV	27855.63	+04	$z^7F_2^\circ - f^7D_1$
G	3588.615	3	IV	27857.98	−05	$z^7F_5^\circ - e^5G_5$
J	3587.424	2	IV	27867.23	00	$a^3P_1 - 1_2^\circ$
U	3587.240	2	IV	27868.66	−02	$z^7F_2^\circ - e^5G_4$
G	3586.985	30	II	27870.64	+01	$a^5F_2 - z^5G_2^\circ$
SS	3586.751	(2)		27872.46	−05	$z^7F_6^\circ - e^5G_6$
B	3586.114	10	IV	27877.41	{ +06 / −08	$b^3H_6 - t^3G_5^\circ$ / $(c^3P_2 - t^3D_2^\circ)$
J	3585.708	20	II	27880.57	00	$a^5F_4 - z^5G_4^\circ$
B	3585.320	30	II	27883.58	00	$a^5F_3 - z^5G_3^\circ$
V	3585.193	(2)		27884.57	00	$b^3G_5 - u^3G_4^\circ$
J	*3584.960	4	IV	27886.38	{ +01 / −19	$b^3H_5 - t^3G_4^\circ$ / $z^7P_2^\circ - e^5P_2$
J	3584.790	1	IV	27887.71	−03	$z^7F_3^\circ - f^7D_2$
B	3584.663	8	IV	27888.70	+02	$a^3G_5 - y^3H_5^\circ$
J	3583.337	2	IV	27899.01	+18	$z^5D_0^\circ - f^5D_1?$
W	3582.69	(2)		27904.05	+01	$z^7F_1^\circ - e^5S_2$
W	3582.56	(1)		27905.06	+05	$a^3H_4 - w^5G_3^\circ$
J	3582.201	5	IV	27907.86	+03	$b^3H_6 - 12_5^\circ$
U	3581.816	(1)		27910.86	−01	$c^3P_1 - t^3D_2^\circ$
J	3581.645	1	IV	27912.19	+04	$a^3G_5 - v^3G_4^\circ$
B	3581.195	250R	I	27915.70	00	$a^5F_5 - z^5G_6^\circ$
U	3578.380	(1)		27937.66	+01	$z^7F_0^\circ - e^7F_1$

TABLE B—(*Continued*)

Ref	λ I A	Int	T C	Observed	o−c	Desig	Ref	λ I A	Int	T C	Observed	o−c	Desig
B	3576.760	2	IV	27950.31	+04	$b^3H_5 - 13_4^\circ$	G	3530.385	2	IV	28317.46	+01	$z^7F_6^\circ - e^7G_6$
G	*3575.976	2	IV	27956.45	+09 / +07	$z^7F_2^\circ - e^7F_3$ / $z^7F_2^\circ - e^5S_2$	G	3529.818	6	III	28322.01	00	$z^7F_1^\circ - e^7G_1$
J	3575.374	4	III	27961.15	−01	$c^3P_2 - u^3D_2^\circ$	U	3529.531	(1)		28324.31	−06	$a^1G_4 - y^3I_5^\circ$
J	3575.249	2	IV	27962.13	−04	$z^7F_6^\circ - f^7D_4$	G	3527.792	4	IV	28338.27	+02	$z^7F_4^\circ - e^7G_4$
U	3575.118	(1)		27963.15	−04	$z^7F_1^\circ - e^7F_1$	J	3526.673	5	IV	28347.26	00	$z^7F_2^\circ - e^7G_3$
G	3573.896	4	IV	27972.71	00	$b^3H_4 - t^3G_3^\circ$	J	3526.465	4	IV	28348.93	+01	$a^3P_2 - y^3P_2^\circ$
U	3573.836	3	IV	27973.18	−01	$a^3H_6 - w^5G_6^\circ$	J	3526.377	4	IV	28349.64	+06	$z^7F_5^\circ - e^7G_5$
U	3573.400	2	IV	27976.60	−02	$a^3D_2 - t^3G_3^\circ$	W	3526.23	(3)		28350.82	+06	$z^7F_3^\circ - f^5F_4$
U	3572.60	(1)		27982.86	−08	$z^7F_4^\circ - e^5G_4$	J	3526.167	15	II	28351.33	+01	$a^5F_3 - z^3G_3^\circ$
G	3571.995	6	IV	27987.60	00	$z^7F_5^\circ - e^7F_5$	J	3526.039	20	I	28352.36	+02	$a^5D_2 - z^5P_3^\circ$
V	3571.228	2	IVA	27993.61	−01	$a^3F_4 - x^5D_3^\circ$	V	3526.016	1	IV	28352.54	−10	$b^3F_3 - 3_3^\circ$
V	3570.243	20	III	28001.33	00	$z^7F_6^\circ - e^7G_7$	U	3525.856	(1)		28353.83	+01	$z^7F_4^\circ - g^5D_4$
G	3570.100	100R	I	28002.46	00	$a^5F_4 - z^3G_5^\circ$	U	3524.236	4	IV	28366.87	+06	$a^3P_2 - u^5D_3^\circ$
W	3569.99	(1)		28003.32	+18	$a^3P_1 - y^5S_1^\circ$	V	3524.075	3	IV	28368.16	00	$b^3F_3 - v^3D_2^\circ$
J	3568.977	4	IV	28011.26	−03	$a^3G_5 - y^3H_4^\circ$	J	3523.30	(1)		28374.40	+05	$z^7F_2^\circ - e^7G_1$
V	3568.828	(2)		28012.43	00	$a^3D_3 - t^3G_4^\circ$	W	3522.896	(1)		28377.65	00	$z^7F_2^\circ - e^5S_3$
U	3568.423	(1)		28015.61	+08	$z^7F_2^\circ - e^7F_1$	U	3522.268	(3)		28382.71	−01	$z^7F_6^\circ - e^5G_5$
W	3567.36	(1)		28023.96	+06	$a^3H_4 - x^5G_4^\circ$	G	3521.833	2	IVA	28386.22	+02	$a^5P_1 - w^5P_2^\circ$
U	3567.038	2	IV	28026.49	−06	$z^7F_2^\circ - e^5G_3$	B	3521.264	25	II	28390.81	−01	$a^5F_4 - z^3G_4^\circ$
W	3566.59	(1)		28030.01	−02	$a^3H_6 - w^5G_5^\circ$	U	3520.855	(1)		28394.10	−06	$b^3F_2 - w^3F_2^\circ$
J	*3565.583	3	IV	28037.93	+01 / −01	$z^7F_3^\circ - e^7F_3$ / $z^7F_3^\circ - e^5S_2$	W	3518.86	(2)		28410.20	+08	$a^5P_2 - w^5P_3^\circ$
B	3565.381	60r	II	28039.52	00	$a^5F_3 - z^3G_4^\circ$	W	3518.68	(1)		28411.65	+01	$z^7F_2^\circ - f^5F_3$
W	3564.11	(1)		28049.51	+02	$a^3F_2 - x^5F_2^\circ$	W	3516.55	(1)		28428.86	+04	$z^7F_3^\circ - e^7G_2$
V	3560.705	5	IV	28076.34	+01	$a^3D_3 - 13_4^\circ$	G	3516.403	5	IV	28430.05	+07	$b^5G_3 - w^3H_4^\circ$
J	3559.506	2	IV	28085.79	+01	$c^3P_1 - 8_1^\circ$	U	3514.626	(1)		28444.42	00	$a^3H_6 - x^3G_5^\circ$
B	3558.518	30	II	28093.59	−01	$a^5F_2 - z^3G_3^\circ$	V	3513.820	30	II	28450.95	−01	$a^5F_5 - z^3G_6^\circ$
G	3556.877	7	IV	28106.55	00	$z^7F_4^\circ - f^5F_5$	U	3513.065	(1)		28457.06	−05	$a^3F_3 - x^5F_2^\circ$
W	3556.68	(1)		28108.11	00	$z^7F_3^\circ - e^5G_3$	U	3512.97	(1)		28457.83	−05	$c^3P_1 - z^1P_1^\circ$
G	3554.922	40	III	28122.01	+02	$z^7F_5^\circ - e^7G_6$	U	3512.239	(1)		28463.76	−08	$z^7F_4^\circ - e^7G_3$
W	3554.50	2	IV	28125.35	+01	$z^7F_1^\circ - e^5G_2$	W	3512.08	(1)		28465.04	+02	$z^7F_4^\circ - f^5F_4$
J	3554.122	4	IIIA	28128.34	−01	$a^5F_3 - z^5G_2^\circ$	U	3511.748	(1)		28467.74	−06	$b^3F_4 - w^3F_4^\circ$
G	3553.741	6	IV	28131.36	+07	$a^1H_5 - v^1G_4^\circ$	U	3510.446	(2)		28478.29	00	$a^3P_0 - x^3P_1^\circ$
G	3552.828	3	IV	28138.58	00	$z^7F_2^\circ - e^7F_2$	U	3509.870	(1)		28482.97	−06	$a^5P_1 - w^5P_1^\circ$
U	3552.42	(1)		28141.81	+05	$a^3H_4 - v^5F_4^\circ$	W	3509.12	(1)		28489.05	−01	$z^7F_5^\circ - e^7G_4$
V	3552.112	1	IV	28144.25	−02	$c^3P_1 - v^3P_2^\circ$	W	3508.52	(1)		28493.93	−01	$b^3F_4 - v^3D_3^\circ$
J	3549.868	4	III	28162.04	−01	$a^3F_2 - x^5F_1^\circ$	J	3508.494	5	IV	28494.14	−09	$b^3G_4 - w^3H_5^\circ$
U	3548.037	(2)		28176.58	−08	$c^3P_2 - u^3D_1^\circ$	W	§3507.39	(1)		28503.11	−10	$c^3P_1 - s^3D_2^\circ$
J	*3547.203	(2)		28183.20	+14 / +02	$z^7F_6^\circ - e^7F_5$ / $b^3H_4 - w^1G_4^\circ$	G	3506.498	6	IV	28510.36	−01	$a^3P_2 - u^5D_1^\circ$
U	3546.21	(1)		28191.09	−05	$a^3H_5 - x^3G_4^\circ$	W	3506.23	(1)		28512.54	00	$z^7F_2^\circ - f^5F_2$
U	3545.832	(1)		28194.10	+01	$a^1G_4 - w^3H_4^\circ$	V	3505.065	2	IV	28522.01	−03	$c^3P_2 - 8_1^\circ$
G	3545.639	5	IV	28195.63	00	$z^7F_4^\circ - e^7F_4$	U	3504.859	2	IV	28523.69	+01	$a^3P_2 - y^3P_1^\circ$
U	3544.631	(2)		28203.65	−01	$b^3F_2 - v^3D_2^\circ$	U	3504.455	(1)		28526.97	+03	$b^3P_2 - v^3F_3^\circ$
J	3543.669	(4)		28211.31	+02	$a^1P_1 - w^1D_2^\circ$	G	3500.564	2	IV	28558.69	+03	$b^3F_3 - w^3F_2^\circ$
U	3543.392	(1)		28213.51	−08	$a^3H_5 - x^3G_5^\circ$	A	3497.843	40	I	28580.90	00	$a^5D_1 - z^5P_2^\circ$
V	3542.243	1	IV	28222.66	−01	$a^3P_2 - z^3S_1^\circ$	V	3497.137	(1)		28586.67	+08	$a^5P_2 - w^5P_2^\circ$
G	3542.076	15	IV	28224.00	+01	$z^7F_3^\circ - e^7G_4$	J	3497.110	10	III	28586.89	−04	$a^5P_3 - w^5P_3^\circ$
G	3541.083	15	IV	28231.91	00	$z^7F_4^\circ - e^7G_5$	U	3496.19	(1)		28594.41	+06	$a^3H_4 - z^1H_5^\circ$
J	3540.709	3	IIIA	28234.89	+02	$a^5F_4 - z^5G_3^\circ$	G	3495.285	8	IV	28601.81	00	$b^3F_4 - w^3F_3^\circ$
G	3540.121	3	IV	28239.58	+02	$z^7F_3^\circ - g^5D_4$	U	3494.170	(1)		28610.94	−06	$a^3P_1 - v^5P_2^\circ$
U	3538.79	(1)		28250.20	−07	$a^1H_5 - x^3I_6^\circ$	U	3493.698	(2)		28614.81	−04	$a^3G_4 - x^1G_4^\circ$
W	3538.55	(1)		28252.12	+09	$a^3P_0 - v^5P_1^\circ$	U	3493.290	(1)		28618.15	−03	$a^3F_4 - x^5F_4^\circ$
W	3538.31	(1)		28254.04	00	$a^1D_2 - u^5F_2^\circ$	A	3490.575	100r	I	28640.41	00	$a^5D_3 - z^5P_3^\circ$
J	3537.896	4	IV	28257.34	−02	$z^7F_5^\circ - f^5F_5$	J	3489.670	4	IV	28647.84	+02	$b^3G_5 - w^3H_6^\circ$
J	3537.729	3	IV	28258.67	+03	$b^3F_2 - v^3D_1^\circ$	U	3486.556	(1)		28673.42	−05	$a^5P_1 - z^3S_1^\circ$
J	§3537.491	1	IV	28260.58	+02	$b^3F_3 - v^3D_3^\circ$	A	3485.342	7	IV	28683.41	−01	$a^5P_2 - w^5P_1^\circ$
G	3536.556	15	IV	28268.05	+03	$z^7F_2^\circ - e^7G_3$	U	3484.972	(1)		28686.45	+04	$a^3P_1 - v^5F_2^\circ$
U	*3534.914	(1)		28281.18	+07 / 00	$a^3F_4 - x^5F_5^\circ$ / $a^3F_3 - x^5F_3^\circ$	U	3484.858	(1)		28687.39	−07	$a^3H_4 - w^3G_3^\circ$
U	3534.53	(1)		28284.25	−03	$a^1H_5 - x^3I_5^\circ$	G	3483.006	3	IIIA	28702.64	+02	$a^5F_4 - z^3G_5^\circ$
G	3533.201	10	IV	28294.89	−03	$z^7F_1^\circ - e^7G_2$	V	3481.558	(1)		28714.58	+02	$a^3P_2 - x^3F_3^\circ$
J	3533.008	5	IV	28296.43	−04	$z^7F_0^\circ - e^7G_1$	V	*3479.683	(1)		28730.06	+12 / −05	$b^5G_5 - y^3I_6^\circ$ / $a^1H_5 - t^3F_4^\circ$
U	3531.446	(1)		28308.95	−05	$a^3H_5 - v^5F_4^\circ$	V	3478.788	(1)		28737.45	+05	$a^3P_1 - v^5P_1^\circ$
							U	3478.374	(1gn)		28740.87	−01	$a^3H_5 - w^3G_4^\circ$
							U	3477.856	(2)		28745.15	−01	$a^5P_1 - y^3P_0^\circ$
							V	3477.007	(1)		28752.17	−04	$a^3P_1 - x^3P_2^\circ$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig	Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig
J	3476.853	(2)		28753.44	+04	b³F₃ − v³G₄°	U	3426.337	(2)		29177.35	−06	a³P₂ − y³S₁°
A	3476.704	40	I	28754.68	00	a⁵D₀ − z⁵P₁°	G	3425.009	4	IV	29188.67	+08	a¹G₄ − x¹F₃°
V	*3476.336	(2w)		28757.71	−22 / +08	a³P₂ − w³D₂° / z⁵P₃° − i⁵D₃	G	3424.284	10	III	29194.84	+02	a⁵P₃ − u⁵D₃°
V	*3475.867	(1)		28761.60	+10 / +13	a³H₅ − z¹H₅° / b³P₁ − y¹D₂°	G	3422.656	7	IV	29208.73	00	a⁵P₁ − w³D₂°
J	3475.651	6	IV	28763.38	−02	a⁵P₃ − w⁵P₂°	J	3422.499	3	IV	29210.07	+05	b³G₄ − 9₄°
G	3475.450	70r	I	28765.04	+01	a⁵D₂ − z⁵P₂°	V	3419.706	(1)		29233.93	−03	b³P₁ − t³D₁°?
V	3473.497	(1)		28781.22	+02	a⁵F₂ − y⁵P₃°	U	3419.154	(1)		29238.65	00	z⁵D₃° − f³F₂
U	3471.350	6	IV	28799.02	−01	a³P₂ − u⁵D₁°	G	3418.507	10	III	29244.18	+07	a⁵P₁ − u⁵D₀°
V	3471.27	5	IV	28799.68	−05	a⁵P₁ − y³P₂°	U	3418.176	(2w)		29247.01	−14	z⁵D₁° − e³P₀?
V	3469.834	2	IV	28811.60	+01	b³P₂ − v³G₃°	G	3417.842	12	III	29249.87	+03	a⁵P₁ − u⁵D₁°
V	3469.390	(1)		28815.29	+03	b³P₁ − x¹D₂°	J	3417.273	(1gn)		29254.74	−11	a⁵F₁ − y⁵P₁°
V	3469.012	(2)		28818.43	+01	b³H₄ − v³H₄°	U	3416.679	(1)		29259.83	+03	a⁵P₀ − w³D₁°
V	3468.849	4	IV	28819.78	00	b³F₄ − v³G₅°	G	3415.530	4	IV	29269.67	+01	a⁵P₁ − x³F₂°
V	3466.501	3	IIIA	28839.30	−01	a⁵F₅ − z³G₄°	A	3413.135	15	III	29290.21	−01	a⁵P₂ − w³D₃°
V	3466.279	(1)		28841.15	+02	a³H₆ − w³G₅°	G	3411.353	3	IV	29305.51	+03	a³G₄ − v³F₄°
A	3465.863	60r	I	28844.61	−01	a⁵D₁ − z⁵P₁°	V	3411.134	(1)		29307.39	−03	a³G₅ − x³H₆°
V	3464.914	(1)		28852.51	−03	b³F₃ − y³H₄°	V	3410.905	(1)		29309.36	−07	a⁵F₄ − y³F₄°
V	3463.305	2	IV	28865.91	+04	a³F₄ − x⁵F₃°	G	3410.171	3	IV	29315.66	+01	a¹P₁ − u³F₂°
V	3462.808	(1)		28870.06	+09	b³P₂ − y¹D₂°	U	3410.031	(1)		29316.87	+02	a¹G₄ − 10₃°
J	3462.353	2	IV	28873.85	−02	a⁵P₂ − z⁵S₁°	U	3409.218	(2)		29323.86	−08	b³H₆ − v³H₅°
G	3459.911	4	IV	28894.23	+09 / +35	c³P₂ − z¹P₁° / (a³P₂ − w³D₁°)	A	3407.461	20d	III	29338.98	+08	a⁵P₃ − x³F₄°
V	3459.429	(2)		28898.26	+01	a³G₅ − x¹G₄°	J	3406.803	6	IV	29344.64	−04	a⁵P₁ − w³D₁°
J	3458.304	4	IV	28907.66	+03	a³P₁ − x³P₀°	J	3406.442	3	IV	29347.75	−05	a³D₁ − w¹D₂°
V	3457.512	(1)		28914.28	−01	a³H₄ − y¹G₄°	W	3405.83	(2)		29353.02	+02	a³G₅ − x³H₆°
V	*3457.090	(3w)		28917.81	−01 / +01	z⁵P₃° − i⁵D₂ / b³P₂ − 7₂°	U	3404.923	(1)		29360.85	−06	a³G₅ − t⁵D₄°
J	3453.022	(2)		28951.87	00	a³G₃ − v³F₂°	V	3404.755	(1)		29362.29	00	a³G₄ − t⁵D₃°
G	3452.273	10	III	28958.15	+02	a⁵F₃ − y³F₄°	G	3404.357	6	IV	29365.73	−03	a⁵P₂ − x³F₃°
G	3451.915	10	IV	28961.16	−01	a³P₁ − u⁵D₂°	V	*3404.301	3	IIIA	29366.21	+08 / −25	a³G₄ − v³F₃° / a⁵F₁ − y³F₂°
J	3451.628	2	IV	28963.57	−09 / +26	a³P₁ − x³P₁° / (b³F₄ − y³H₅°)	U	3403.299	(2)		29374.86	+07	a³G₄ − u³G₅°
G	3450.328	10	IV	28974.48	00	a⁵P₁ − y³P₁°	G	3402.256	5	IV	29383.86	00	b³H₆ − v³H₅°
V	3448.869	(1)		28986.74	−04	b³F₄ − v³G₄°	A	3401.521	6	III	29390.21	−01	a⁵F₄ − y⁵P₃°
V	3448.786	(1)		28987.44	00	b³P₂ − u³G₃°	A	3399.336	15	III	29409.10	−02	a⁵P₂ − w³D₂°
U	3448.472	(1)		28990.07	00	b³G₃ − 9₄°	V	3399.230	(1)		29410.02	+01	a³G₄ − 4₄°
G	3447.278	8	IV	29000.12	00	a⁵P₂ − y³P₂°	U	3398.220	(1)		29418.76	00	a³G₃ − u³G₄°
U	3446.947	(1)		29002.90	+03	a⁵F₁ − y⁵P₂°	V	3397.642	2	IIIA	29423.76	−02	a⁵F₃ − y⁵P₁°
V	3446.791	(1)		29004.21	−02	b³F₂ − w³P₁°	V	3397.560	(1)		29424.47	−01	b³G₃ − x¹F₃°
A	3445.151	20	III	29018.02	+01	a⁵P₃ − u⁵D₃°	V	3397.221	(1)		29427.41	−07	c³P₂ − x¹F₂°
A	3443.878	50r	I	29028.74	−01	a⁵D₂ − z⁵P₁°	A	3396.978	4	IIIA	29429.59	−01	a⁵F₃ − y⁵P₂°
V	*3442.979	(1)		29036.32	+01 / −13	c³P₁ − v³P₁° / a¹D₂ − t³F₃°	V	3396.386	(1)		29434.64	−06	a⁵F₃ − y³F₃°
J	3442.672	3	IIIA	29038.91	−02	a⁵F₃ − y⁵P₃°	G	3394.583	5	IV	29450.28	+05	a⁵P₂ − u⁵D₁°
V	3442.364	5	IV	29041.51	+01	a³P₂ − 1₂°	V	3394.085	(1)		29454.60	−07	a³H₄ − w³F₃°
J	3440.989	75R	I	29053.12	+02	a⁵D₃ − z⁵P₂°	V	3393.915	(1)		29456.07	+03	a³P₃ − x³G₃°
J	3440.610	150R	I	29056.32	−02	a⁵D₄ − z⁵P₃°	V	*3393.609	(1w)		29458.73	+13 / −14	b³P₂ − u³D₂° / a⁵G₃ − y¹D₂°
U	3439.039	(1)		29069.59	−01	a⁵G₄ − x³H₅°	V	3393.382	(1)		29460.70	+03	b³P₀ − u³D₁°
U	3437.952	(2)		29078.78	−02	b³H₅ − v³H₅°	G	3392.652	15	III	29467.04	+01	a⁵P₃ − w³D₃°
V	3437.631	(1)		29081.49	−04	a³H₅ − y¹G₄°	G	3392.304	8	IV	29470.06	00	a⁵P₂ − x³F₂°
G	3437.046	3	IV	29086.44	00	a¹G₄ − y¹F₃°	U	3392.014	2	IV	29472.58	+01	c³P₂ − v³P₁°
V	3436.045	(1)		29094.92	−05	b³H₅ − v³H₄°	V	3389.748	2	IV	29492.28	−03	a⁵P₁ − 1₂°
V	3434.029	(1w)		29112.00	00	a³G₃ − t⁵D₃°	V	3388.966	(1w)		29499.09	+04	c³P₁ − t⁵P₁°
V	3432.023	(1)		29129.01	−02	b³P₀ − t³D₁°?	W	3388.8	(1)		29500.5	+1	a³P₁ − 2₂°
J	*3431.815	3	IV	29130.78	00 / +22	b³P₂ − u³D₃° / a³D₂ − w¹D₂°	V	3387.410	2	IV	29512.64	−02	a³G₃ − x¹D₂°
V	3428.746	(2)		29156.85	+02	z⁵P₃° − 4₂	C	3383.981	8	IV	29542.54	−03	a⁵P₃ − x³F₃°
G	3428.192	8	III	29161.56	00	a⁵P₂ − u⁵D₂°	G	*3383.692	5	IV	29545.07	−01 / −15	a⁵P₂ − w³D₁° / b³G₅ − 9₄°
A	3427.121	20	III	29170.66	+02	a⁵P₃ − u⁵D₄°	V	3383.387	(1)		29547.73	−14	b³F₂ − z¹F₃°?
J	3427.002	2	IIIA	29171.69	−11	a⁵F₂ − y⁵P₂°	G	3382.403	3	IV	29556.32	−01	a⁵P₃ − z³H₄°
J	3426.637	5	IV	29174.80	−08	a⁵P₂ − y³P₁°	V	*3381.340	(2)		29565.61	+01 / −08	b³P₁ − u³D₁° / a³D₃ − w¹F₃°
J	*3426.383	5d	IIIA	29176.96	+03 / −02	a⁵P₃ − y³P₂° / a⁵F₂ − y³F₃°	C	3380.111	8	IV	29576.36	+02	a³G₃ − u³G₃°
							V	3380.004	(1)		29577.30	−18	z⁵F₅° − 2
							G	3379.017	6	IV	29585.94	+01	a⁵P₃ − w³D₂°
							G	3378.676	6	IV	29588.92	+04	a³G₅ − v³F₄°
							V	3374.221	(1)		29627.99	−23	a⁵P₁ − y³S₁°

TABLE B—(*Continued*)

Left half:

Ref	λ I A	Int	T C	Observed	o−c	Desig
V	3373.874	(1)		29631.04	−02	a³G₄ — 6₅°
U	3372.352	(1)		29644.41	−02	b³G₄ — x¹F₃°
G	3372.070	3	IV	29646.89	+03	a⁵P₃ — x³F₂°
A	3370.786	10	IV	29658.18	−01	a³G₅ — u³G₅°
G	**3369.549	8	III	29669.07	{+02 / +05}	a³G₄ — u³G₄° / (c³P₂ — 11₈°)
V	3368.983	(1)		29674.05	−05	b³P₂ — u³D₁°
U	3367.159	(1)		29690.13	−06	a³P₁ — v³D₃°
U	3366.867	5	IV	29692.70	00	a⁵P₂ — 1₂°
U	3366.789	5	IV	29693.39	−02	a³G₅ — 4₄°
V	3364.639	(1)		29712.37	00	b³F₃ — z¹F₃°
V	3363.815	(1)		29719.64	−04	a³G₃ — u³D₃°
V	3361.959	(1)		29736.05	−02	b³P₁ — t³D₂°
U	3360.922	(1)		29745.22	+05	a²P₁ — v³D₁°
V	3359.814	(2)		29755.03	−02	b³H₄ — u³H₅°
U	3359.491	2	IIIA	29757.89	−03	a⁵F₅ — y³F₄°
H	3356.407	3	IV	29785.03	−24	a³P₂ — v⁵P₂°
U	3356.323	1	IVA	29785.98	−02	a⁵F₄ — y³F₃°
V	3355.517	(1)		29793.14	+02	a⁵F₃ — y³F₂°
C	3355.228	6	IV	29795.70	+01	b³H₄ — u³H₄°
U	3354.064	3	IV	29806.04	−01	b³P₀ — 8₁°
U	3353.267	(1)		29813.13	−03	a³H₅ — y³H₆°
V	3352.929	(1)		29816.13	−04	a³H₄ — y³H₅°
V	3351.750	3	IV	29826.62	−01	a³G₄ — u³G₃°
V	3351.529	2	IV	29828.58	−03	a⁵P₂ — y³S₁°
V	*3350.284	(3)		29839.67	{+03 / −21}	a³H₄ — v³G₄° / a³H₅ — v³G₅°
V	3349.739	(1)		29844.52	−05	b³P₂ — t³D₂°
A	3347.927	6	IV	29860.68	−01	a³P₂ — v⁵F₂°
V	3347.507	(1)		29864.42	−03	b³G₄ — t³G₅°
U	3346.936	1	IV	29869.52	+01	a⁵P₃ — 1₃°
V	3345.679	(1)		29880.74	+05	a³P₁ — w³F₂°
V	3343.678	(1)		29898.62	−04	b³G₃ — t³G₄°
U	3343.240	(1)		29902.54	−02	a¹P₃ — z¹G₄°
V	3342.298	4	V	29910.96	−02	b³P₁ — 8₁°
V	3342.216	5	IV	29911.70	+03	a³P₂ — v⁵P₁°
G	3341.906	5	IIIA	29914.48	+02	a³G₅ — 6₅°
A	3340.566	6	IV	29926.47	−02	a³P₃ — x³P₂°
U	3339.582	(1w)		29935.29	−02	c³P₂ — t⁵P₁°
U	*3339.195	2	IV	29938.76	{−02 / −03}	a³H₄ — y³H₄° / b⁵G₅ — y¹H₅°
U	3338.638	(3w)		29943.75	+01	z⁷P₃° — g⁷D₄
C	3337.666	6	IV	29952.48	+03	a³G₅ — u³G₄°
U	3336.254	(3)		29965.15	+03	b³H₄ — u³F₄°
V	3335.776	4	IV	29969.44	−03	b²P₁ — v³P₂°
V	3335.513	(1)		29971.81	00	a³F₃ — x⁵P₃°
V	3335.403	(1)		29972.80	−08	b³F₄ — x¹G₄°
V	3334.278	(1)		29982.91	−01	b⁵H₅ — u³H₆°
V	3334.223	(3)		29983.40	−01	a³H₅ — y³H₆°
V	3331.778	(2)		30005.40	+01	a³P₀ — w³P₁°
V	3331.612	3	IV	30006.90	+02	a³H₅ — v³G₄°
U	3329.532	(2)		30025.64	−02	a¹G₄ — t³G₃°
C	3328.867	5	IV	30031.64	+04	b³H₅ — u³H₅°
V	3327.961	(1)		30039.82	−04	a⁵P₃ — w⁵G₄°
V	3327.498	(2)		30044.00	00	a³H₅ — y³H₆°
V	3325.468	4	IV	30062.34	+01	a³H₄ — v³G₃°
V	3324.541	4	IV	30070.72	00	a³H₅ — v³G₅°
V	3324.372	(2)		30072.25	+01	b³H₅ — u³H₄°
C	3323.737	7	IV	30077.99	+02	b³P₂ — v³P₂°
G	3322.474	5n	IV	30089.42	−01	z⁷P₄° — g⁷D₅
U	3320.779	(2n,gn)		30104.78	−01	z⁷P₂° — g⁷D₂
V	3320.650	(2)		30105.95	−07	a³H₅ — y³H₄°
V	3319.258	2	IV	30118.58	−03	b³G₄ — t³G₄°
G	3317.121	3	IV	30137.98	+05	a³P₂ — x³P₁°
C	3314.742	7	IV	30159.61	+01	a³D₂ — u³F₃°

Ref	λ I A	Int	T C	Observed	o−c	Desig
U	3314.441	(2)		30162.35	+04	b³F₂ — v³F₂°
V	§3314.070	(1)		30165.73	−03	a¹P₁ — t³F₂°
V	3313.723	(1)		30168.89	−05	a³F₂ — y⁵G₃°
U	3312.224	(1)		30182.54	+03	b³G₄ — 13₄°
V	3311.451	(1)		30189.58	−01	a⁵F₂ — y³D₃°
V	3310.496	(3)		30198.29	−01	a³D₃ — u³H₄°
V	3310.347	4	IV	30199.65	00	b³G₅ — t³G₅°
G	3307.234	5	IV	30228.07	+01	b³H₆ — u³H₆°
U	3307.008	(1)		30230.14	+01	b³G₅ — 12₅°
S	3306.703	(−)		30232.93	+07	z⁷P₃° — g⁷D₃
U	3306.490	(1)		30234.88	−04	a³D₂ — u⁵F₂°
C	3306.356	20	III	30236.10	{+02 / −03}	a⁵P₁ — v⁵P₂° / (a¹G₄ — w¹G₃°)
C	3305.971	20	III	30239.62	+01	a⁵P₃ — v⁵P₃°
V	3303.574	(2)		30261.56	+01	b³G₃ — t³G₃°
U	3301.917	(1)		30276.75	+01	b³H₆ — u³H₅°
V	3301.227	(2)		30283.08	00	b³P₁ — z¹P₁°
U	3299.509	(1)		30298.85	−03	a³F₃ — x⁵P₂°
U	3299.077	(1w)		30302.81	−08	z⁵F₃° — i⁵D₄
A	3298.133	6	IV	30311.49	00	a⁵P₁ — v⁵F₂°
V	§3296.806	(1)		30323.69	+06	b³H₄ — v¹G₄°
U	3296.467	(1)		30326.80	−01	b³F₃ — v³F₂°
U	3293.142	(1)		30357.43	+02	a³F₂ — z⁵H₃°
G	3292.590	8	IV	30362.51	+03	a⁵P₁ — v⁵P₁°
G	3292.022	8	IV	30367.76	+03	a³D₃ — u³F₄°
G	3290.988	5	IV	30377.29	−01	a⁵P₁ — x³P₂°
U	3290.714	(2)		30379.82	−01	a⁵P₃ — v⁵F₄°
U	3289.442	(2)		30391.57	−01	b³P₂ — z¹P₁°
U	3288.967	2	IV	30395.96	+01	a⁵P₂ — v⁵F₃°
U	3288.651	(2)		30398.88	+01	a³P₁ — w³P₀°
V	3287.117	(1w)		30413.07	−08	z⁷P₄° — g⁷D₄
A	3286.755	20	III	30416.42	00	a⁵P₃ — v⁵P₃°
U	3286.444	(2w)		30419.30	+03	z⁵F₃° — i⁵D₃
U	3286.022	2	IV	30423.20	−01	a⁵P₁ — v⁵F₁°
U	3285.20	(1)		30430.81	−03	z⁷P₃° — g⁷D₂
A	3284.588	5	IV	30436.48	+01	a⁵P₂ — v⁵P₂°
V	3283.430	(1)		30447.21	−10	a⁵F₃ — y³D₃°
G	3282.891	(2)		30452.21	+05	a³D₁ — u³F₂°
U	3282.720	(1)		30453.80	−01	b³G₅ — t³G₄°
V	3280.763	(1)		30471.96	−06	b³G₃ — w¹G₄°
C	3280.261	8	IV	30476.62	00	b³H₄ — x³I₅°
U	3279.739	(21)		30481.48	−02	b³G₄ — t³G₃°
V	*3278.741	4	IV	30490.76	{00 / −02}	a³P₁ — w³P₁° / b³F₃ — v³F₃°
V	3276.468	4	IV	30511.91	+02	a⁵P₂ — v⁵F₂°
U	3275.848	(1)		30517.68	−03	b³G₅ — 13₄°
V	3275.685	(1)		30510.20	−12	a³G₃ — w³H₄°
U	3274.453	(2w)		30530.68	−07	z⁵F₄° — i⁵D₄
U	3272.71	(1)		30546.95	+14	z⁵F₁° — 4₂
U	3271.683	(2)		30556.53	+03	a³F₄ — x⁵P₃°
U	3271.487	(2)		30558.36	+06	a³D₃ — u⁵F₃°
A	3271.002	15	III	30562.89	+02	a⁵P₂ — v⁵P₁°
V	3269.964	(1)		30572.59	−17	a⁵P₃ — v⁵F₃°
V	3269.235	(1w)		30579.41	−05	z⁵F₃° — i⁵D₂
G	3268.234	5	IV	30588.78	+04	a⁵P₁ — x³P₁°
G	3265.616	15	III	30613.30	+02	a⁵P₃ — v⁵P₂°
G	3265.046	8	IA	30618.64	00	a⁵D₂ — z⁵D₃°
U	3264.710	(2)		30621.79	−14	z⁷D₂° — f⁵D₃
U	3264.512	5	IV	30623.65	+05	a⁵P₂ — v⁵F₁°
V	3263.378	(2)		30634.29	−09	a³P₁ — w³P₂°
V	3262.009	(2)		30647.15	+02	z⁵F₄° — i⁵D₃
V	3261.332	(2)		30653.51	−06	z⁵F₂° — 4₂
U	3260.261	4	IV	30663.58	+07	b³F₄ — v³F₄°
G	3259.991	6	IV	30666.12	−02	z⁷D₃° — f⁵D₄
A	3257.594	8	IV	30688.68	−01	a⁵P₃ — v⁵F₂°

TABLE B—(Continued)

Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig
V	*3257.244	2	IV	30691.98	+01 / −29	b³G₄ — w¹G₄° / a⁵F₂ — y³D₂°
U	3254.734	(2)		30715.65	−05	a³G₅ — w³H₆°
C	3254.363	10	IV	30719.15	−01	b³H₅ — x³I₆°
V	3254.261	(1)		30720.11	−21	b³F₄ — t⁵D₃°
U	3253.949	(2)		30723.06	−04	b³F₂ — x¹D₂°
U	3253.834	(1)		30724.15	−01	b³F₄ — v³F₃°
V	3253.610	4	IV	30726.26	+02	a³D₃ — v¹G₄°
U	3252.926	4	IV	30732.72	−10	b³F₄ — u³G₅°
G	3251.236	8	IV	30748.69	−03	a⁵P₂ — w³G₃°
U	3250.623	4	IV	30754.49	−01	a⁵P₃ — x³P₂°
U	*3250.394	(2)		30756.66	+08 / −20	b³P₀ — v³P₁° / a³P₂ — v³D₃°
U	3249.191	3	IV	30768.05	+01	b³F₄ — 4₃°
V	3249.037	(1)		30769.50	−11	a³G₄ — w³H₄°
G	3248.206	10	IV	30777.38	−02	z⁷D₃° — f⁵D₃
U	3247.278	3	IV	30786.17	+01	z⁷D₂° — f⁵D₂
U	3246.962	6	IV	30789.17	+04	a⁵P₂ — x³P₁°
U	3246.482	3	IV	30793.72	+02	b³F₃ — u³G₄°
G	3246.005	8	I	30798.24	00	a⁵D₁ — z³D₂°
V	3245.984	(2)		30798.44	−17	a⁵F₄ — y³D₃°
A	3244.190	15	IV	30815.47	+01	z⁷D₄° — f⁷D₅
V	*3243.406	3	IV	30822.92	−11 / +15	z⁵F₅° — i⁵D₄ / b³P₂ — y¹F₃°
U	3243.109	(1)		30825.75	+01	a³H₄ — x¹G₄°
V	3242.268	(1)		30833.74	−07	b³F₃ — y¹D₂°
U	3241.52	(1)		30840.86	−18	a⁵F₁ — y³D₁°
U	3240.013	(1)		30855.20	00	a¹G₄ — v³H₅°
A	3239.436	15	IV	30860.70	−02 / +20	z⁷D₄° — f⁵D₄ / (z⁷D₁° — f⁵D₁)
V	*3239.029	(1)		30864.57	+11 / −17	a³P₂ — v³D₂° / a³P₂ — w³F₃°
S	3238.535	(−)		30869.28	+09	z⁷P₂° — e³P₁
V	3237.234	(1)		30881.69	+05	b³F₃ — 7₂°
A	3236.223	8	IA	30891.33	−01	a⁵D₃ — z³F₄°
U	3235.592	(1)		30897.36	+05	a³G₅ — w³H₆°
G	3234.614	7	IA	30906.70	−01	a⁵D₃ — z³D₃°
G	3233.967	12	IV	30912.88	+02	z⁷D₄° — e⁷P₄
V	3233.304	(1)		30919.22	−22	a³P₂ — v³D₁°?
G	3233.053	8	IV	30921.62	+01	b³H₆ — x³I₇°
U	3231.576	(1)		30935.75	+09	a³F₄ — y⁵G₅°
G	3230.963	10	IV	30941.62	−01	z⁷D₃° — f⁵D₂
V	3230.210	6	IV	30948.84	+03	z⁷D₂° — e⁷P₂
U	3229.994	(3)		30950.91	+02	a¹G₄ — x¹H₅°
W	3229.78?	(1)		30952.96	−11	b³F₃ — u⁵F₂°
G	3229.123	4	IIA	30959.26	−02	a⁵D₀ — z³D₁°
G	3228.900	3	IV	30961.39	+02	z⁷D₁° — f⁵D₀
U	3228.254	5	IV	30967.59	−05	z⁷D₂° — f⁵D₁
V	3228.003	(2)		30970.00	−01	b³P₂ — v³P₁°
G	3227.798	15	IV	30971.96	−02	z⁷D₄° — f⁵D₃
U	3227.063	3	IV	30979.02	−02	z⁷D₅° — f⁷D₄
U	3226.720	2	IIIA	30982.31	−06	a⁵D₂ — z³D₂°
A	3225.789	25	III	30991.25	−04	z⁷D₆° — e⁷F₆
U	*3225.607	(1)		30993.00	+02 / +10	a³H₅ — x¹G₄° / b³D₃ — r³G₃°
U	3223.844	(1)		31009.95	−02	a⁵F₂ — y³D₁°
V	3223.273	(1)		31015.44	+04	a³F₄ — z⁵H₅°
A	3222.069	20	III	31027.03	00 / −14	z⁷D₅° — f⁷D₅ / (b³G₅ — w¹G₄°)
U	3221.931	2	IV	31028.36	−09	z⁷D₁° — f⁷D₁
G	3219.806	10	III	31048.84	00 / −39	z⁷D₄° — e⁷P₃ / (a⁵D₁ — z³D₁°)
G	3219.581	12	IV	31051.01	00	z⁷D₃° — f⁷D₄
A	3217.380	10	IV	31072.24	−05	z⁷D₅° — f⁵D₄
A	3215.940	12	IV	31086.16	−02	z⁷D₂° — f⁷D₂

Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig
V	3215.637	(3)		31089.09	+03	z⁷F₆° — e³G₅
V	3214.624	(1)		31098.88	00	a³P₂ — z¹D₂°
G	3214.396	8	IA	31101.09	00	a⁵D₂ — z³F₃°
V	*3214.044	20	III	31104.50	−16 / −31 / +22	z⁵F₄° — g⁵G₅ / z⁷D₃° — f⁷D₃ / (z⁷D₃° — e⁷P₂)
U	3213.754	(1)		31107.30	+04	b³G₃ — v³H₄°
G	3211.989	10	IV	31124.40	−03	z⁷D₅° — e⁷P₄
V	*3211.872	4	IV	31125.53	+01 / +05	a⁵P₁ — 2₂° / z⁵F₃° — g⁵G₄
U	3211.683	8	IV	31127.36	+04	z⁵F₅° — g⁵G₆
U	3211.487	4	IV	31129.25	+01	z⁷D₁° — e⁵S₂
G	3210.830	10	IV	31135.63	+04	z⁷D₂° — f⁷D₁
G	3210.230	8	IV	31141.45	00	z⁷D₄° — e⁵G₅
G	*3209.297	6	IV	31150.50	+01 / +03	z⁵F₂° — g⁵G₃ / z⁷F₆° — g⁷D₅
V	3209.115	(1)		31152.27	−09	a⁵P₃ — y¹G₄°
U	3208.470	4	IV	31158.53	+08	z⁵F₁° — g⁵G₂
V	3207.649	(1w)		31166.51	+05	b³P₂ — 11₃°
U	3207.089	2	IV	31171.95	−10	z⁷D₅° — e⁵G₆
A	3205.400	15	IV	31188.37	−02	z⁷D₁° — e⁷F₁
V	3202.562	2	IV	31216.01	−02	a¹G₄ — w¹F₃°
S	3201.891	(−)		31222.55	−04	z⁷D₃° — e⁵G₄
U	3200.784	2	IIIA	31233.35	00	a⁵D₂ — z³D₁°
A	*3200.475	15	IV	31236.37	+01 / −01	z⁷D₂° — e⁷F₃ / z⁷D₂° — e⁵S₂
U	3199.530	15	II	31245.59	00 / −29	z⁷D₄° — f⁷D₄ / (a⁵D₁ — z³F₂°)
U	3198.266	(1)		31257.94	00	b³F₂ — u³D₂°
U	3197.521	(1)		31265.22	+01	z⁵F₅° — g⁵G₂
U	3196.977	(2)		31270.54	+10	a⁵D₅ — z³D₃°
A	**3196.930	20	II	31271.00	−02	z⁷D₄° — e⁷F₅
V	3196.147	2	IV	31278.66	−08	z⁷F₅° — g⁷D₄
V	3194.422	3	IV	31295.55	+02	z⁷D₂° — e⁷F₁
U	3193.303	8	IV	31306.52	−03	z⁷D₂° — e⁵G₃
U	3193.228	10	IA	31307.25	−02	a⁵D₄ — z³F₄°
G	3192.799	8	IV	31311.46	+02 / +42	z⁷D₁° — e⁷F₂ / (b⁵G₄ — v⁵H₅°)
U	*3192.417	(1)		31315.20	−19	z⁵F₃° — g⁵G₃
A	3191.659	7	IA	31322.64	00	a⁵D₄ — z³D₃°
S	3191.180	(−)		31327.34	+13	b³G₄ — v³H₄°
U	3191.116	(1)		31327.97	−03	b³F₄ — u³D₃°
U	3190.816	(2)		31330.91	+04	a¹G₄ — s³G₄°
U	3190.651	(2)		31332.54	+01	a¹G₄ — s³G₄°
W	3190.02	(1)		31338.74	−03	b³F₃ — t³D₃°
G	3188.819	7	IV	31350.54	+01	z⁷D₁° — e⁵G₂
G	3188.567	4	IV	31353.02	00	z⁷D₅° — e⁵G₅
A	3184.896	7	IA	31389.15	−01	a⁵D₃ — z³F₃°
U	*3184.622	3	IV	31391.85	+02 / 00	z⁷D₃° — e⁷F₃ / z⁷D₅° — e⁵S₂
G	3182.970	3	IV	31408.14	+08	a⁵P₂ — v³D₂°
U	*3182.060	3	IV	31417.13	−04 / +08	z⁷D₄° — e⁵G₄ / z⁷F₄° — g⁷D₃
U	*3181.922	(2)		31418.49	00 / −09	c³P₂ — w¹D₂° / z⁷D₂° — e⁷F₂
U	3181.847	(3)		31419.22	+01	z⁷F₂° — g⁷D₂
G	3181.522	4	IV	31422.44	00	b³F₃ — u³D₂°
G	3180.756	5	IIA	31430.01	00	a⁵D₂ — z³F₂°
G	3180.223	20	IV	31435.27	−01	z⁷D₂° — e⁷F₄
U	§3179.479	(1)		31442.63	+02	a³F₂ — w⁵D₁°
U	3178.967	3	IV	31447.70	−03	a³H₅ — x³H₅°
V	3178.545	2	IV	31451.87	−05	b³G₃ — w¹F₃°
A	3178.015	10	IV	31457.11	−05 / −56	z⁷D₅° — f⁷D₄ / (z⁷D₂° — e⁵G₂)

TABLE B—(*Continued*)

Ref	λ I A	Int	T C	Observed	o−c	Desig	Ref	λ I A	Int	T C	Observed	o−c	Desig
Q	3177.54	(2)	Fe II	31461.82	−20	$(z^7D_3° - e^5G_3)$	G	3120.435	6	IV	32037.56	+04	$a^3H_4 - u^3G_3°$
V	3176.366	2	IV	31473.44	00	$b^3F_2 - u^3D_1°$	G	3119.495	6	IV	32047.21	+03	$a^1H_5 - u^3G_4°$
W	3175.97	(1)		31477.37	+02	$z^7F_0° - g^7D_1$	U	3117.640	1	IIIA	32066.27	−01	$a^5F_2 - y^7P_2°$
A	3175.447	12	IV	31482.55	−04	$z^7D_5° - e^7F_6$	A	§3116.633	12	III	32076.64	00	$a^5F_1 - x^5D_2°$
V	3173.663	(3r)		31500.25	+11	$a^5P_2 - 3_3°$	U	3116.250	(1)		32080.58	+34	$z^7D_3° - e^5P_3?$
U	3173.608	(1)		31500.79	+02	$z^7F_3° - g^7D_2$	V	3112.079	3	IV	32123.57	00	$b^3G_5 - s^3G_5°$
W	3173.40	(1)	·	31502.86	−03	$z^7F_1° - g^7D_1$	U	3111.686	(2)		32127.63	−01	$b^3F_4 - w^3H_4°$
V	*3172.067	2	IV	31516.10	+17 / −27	$a^5P_2 - w^3F_3°$ / $a^3H_4 - v^3F_4°$	U	3109.05	(1)		32154.87	−07	$z^7D_2° - c^5P_2$
U	3171.663	2	IV	31520.11	−01	$z^7D_1° - e^7G_2$	U	§3106.542	(1)		32180.83	−03	$a^3H_4 - u^3D_3°$
V	*3171.353	5	IV	31523.19	−09 / +03	$a^3F_4 - w^5D_4°$ / $a^1G_4 - s^5G_3°$	U	3101.004	(2)		32238.30	+01	$a^3G_4 - t^3G_4°$
U	3168.858	2	IV	31548.01	−01	$z^7D_2° - e^7G_3$	U	3100.838	(2)		32240.02	−01	$a^3H_6 - 6_5°$
V	3167.907	(1)		31557.48	+08	$z^5D_3° - i^5D_4$	G	3100.666	20	II	32241.81	00	$a^5F_3 - x^5D_3°$
G	3166.435	6	IV	31572.15	00	$b^3F_4 - t^3D_3°$	G	3100.304	20	II	32245.57	00	$a^5F_2 - x^5D_2°$
G	3165.860	4	IV	31577.89	−01	$z^7D_3° - e^7G_4$	U	3099.971	15	II	32249.04	−01	$a^5F_4 - x^5D_4°$
V	3165.005	3	IV	31586.41	00	$z^7D_4° - e^7F_3$	U	3099.897	20	II	32249.81	−01	$a^5F_1 - x^5D_1°$
U	3164.308	(1)		31593.37	−09	$z^7D_3° - g^5D_4$	U	3098.192	6	IV	32267.55	+02	$a^3G_5 - t^3G_5°$
U	*3162.335	2n	IV	31613.08	−06 / −02	$z^7D_3° - e^5G_2$ / $a^3G_5 - 9_4°$	V	3095.270	(2)		32298.01	00	$a^3G_5 - 12_5°$
G	3161.949	8	IV	31616.94	−04	$z^7D_5° - e^7G_6$	U	3094.870	(1)		32302.19	00	$a^3G_4 - 13_4°$
V	3161.370	4	IV	31622.73	+04	$a^3F_3 - w^5D_2°$	U	3093.883	(2ld)		32312.49	−05	$b^3F_4 - s^3D_3°$
A	3160.658	10	IV	31629.86	00	$z^7D_4° - e^7F_4$	V	3093.806	3	IVA	32313.30	−02	$a^3F_2 - x^3D_2°$
U	3160.344	(2)		31633.00	+01	$a^3H_6 - x^3H_5°$	U	**3092.778	2	III?	32324.04	+03	$a^5F_3 - y^7P_2°$
V	3160.200	(2n)		31634.44	−01	$z^5D_2° - i^5D_3$	A	3091.578	20	II	32336.58	−01	$a^5F_1 - x^5D_0°$
W	3158.99	(2)		31646.56	+32	$b^3G_5 - v^3H_5°?$	V	3090.209	(1)		32350.91	+02	$a^3G_3 - t^3G_3°$
U	3157.992	(2)		31656.56	−04	$z^7D_4° - e^5G_3$	A	3083.742	20	II	32418.75	00	$a^5F_2 - x^5D_1°$
K	3157.88	6	IV	31657.64	−01	$z^7D_2° - e^7S_3$	U	3083.152	(1)		32424.95	−06	$a^3H_4 - t^3D_3°$
A	3157.040	8	IV	31666.10	−04	$z^7D_4° - e^7G_5$	V	3078.436	3	IV	32474.62	+02	$a^3P_0 - u^3D_1°$
U	3156.464	(1)		31671.88	+01	$b^3G_4 - w^1F_3°$	G	3078.014	4	IVA	32479.08	+03	$a^5F_3 - y^7P_3°$
G	3156.275	5n	IV	31673.77	−01	$z^5D_3° - i^5D_3$	A	3075.721	25r	II	32503.29	00	$a^5F_3 - x^5D_2°$
V	3155.293	2	IV	31683.63	+02	$a^3H_5 - v^3F_4°$	V	3074.157	(2)		32519.82	−03	$b^3G_3 - u^3F_2°$
SS	3155.131	(1)		31685.26	−14	$z^7D_1° - f^5F_2$	V	3073.982	(1)		32521.68	−01	$a^3G_5 - t^3G_4°$
U	3154.505	2	IV	31691.55	−09	$z^7D_2° - f^5F_3$	S	3073.244	(−)		32529.48	−09	$a^1G_4 - x^3I_5°$
SS	3154.421	(1)		31692.39	−08	$a^5P_3 - v^3D_2°$	S	3068.927	(−)		32575.24	+06	$a^1F_4 - v^5D_3°$
U	3153.322	(1)		31703.44	−05	$z^7D_3° - e^7G_3$	G	3068.175	8	IV	32583.22	−04	$a^3F_2 - x^3D_1°$
G	3153.200	5	IV	31704.66	−01	$z^7D_3° - f^5F_4$	V	3067.952	(1)		32585.59	00	$a^3G_5 - 13_4°$
S	*3153.064	(−)		31706.03	−03 / −13	$b^3G_5 - v^3H_5°$ / $a^5P_2 - w^3F_2°$	A	3067.244	30r	II	32593.12	+02	$a^5F_4 - x^5D_3°$
V	3151.867	(1)		31718.08	00	$a^5D_3 - z^3F_2°$	U	3067.120	8	IV	32594.43	−02	$a^3F_2 - y^3G_3°$
G	3151.353	10	IV	31723.25	−02	$a^3G_4 - y^1H_5°$	U	3066.483	3	IV	32601.20	+02	$a^3G_4 - t^3G_5°$
U	3150.304	(2n)		31733.81	+03	$z^5D_1° - 4_3$	U	3063.933	(2)		32628.34	+01	$a^3P_1 - t^3D_1°?$
U	3148.420	(2)		31752.80	−12	$a^3H_5 - u^3G_5°$	S	3063.149	(1)		32636.69	+03	$a^5P_3 - w^3P_2°$
U	3147.793	(1)		31759.12	+07	$b^3G_3 - s^3G_3°$	S	3062.872	(1)		32639.64	−04	$b^3G_5 - u^3H_4°$
U	3146.475	(1)		31772.42	−06	$z^7D_4° - e^7G_4$	G	3060.984	4	IV	32659.73	−05	$a^3F_3 - x^3D_3°$
V	3145.057	(2)		31786.74	+03	$b^3G_4 - s^3G_4°$	V	3060.545	(1)		32664.45	−03	$b^3G_4 - u^3F_3°$
V	3144.488	6n	IV	31792.50	−04	$z^7D_2° - f^5F_2$	A	3059.086	100R	I	32680.03	00	$a^5D_3 - y^6D_4°^c$
C	3143.990	8	IV	31797.54	−05	$z^5D_4° - i^5D_4$	A	3057.446	40R	II	32697.56	+01	$a^5F_5 - x^5D_4°$
V	3143.242	2	IIIA	31805.10	00	$a^5D_4 - z^3F_3°$	C	3055.263	12	III	32720.92	−02	$a^3F_3 - x^3D_2°$
V	3142.888	5	IV	31808.69	+04	$a^3P_2 - w^3P_2°$	S	3054.949	(−)		32724.28	+02	$b^3F_2 - x^1F_3$
U	3142.453	6	IV	31813.08	−04	$z^7D_3° - e^7S_3$	W	*3053.44	(2)		32740.46	+16 / −11	$a^5F_1 - z^5S_2°$ / $z^7P_4° - 2$
U	3140.391	5n	V	31833.98	+01	$z^5D_3° - i^5D_2$	G	3053.065	5	IV	32744.48	+01	$a^3P_1 - u^3D_2°$
U	3139.661	(1)		31841.38	−05	$z^7D_5° - e^7F_4$	A	3047.605	100R	I	32803.14	00	$a^5D_2 - y^6D_3°$
U	3135.863	(1)		31879.94	00	$a^3H_4 - u^3G_4°$	S	3047.201	(−)		32807.49	+06	$b^3P_1 - w^1D_2°$
A	**3134.111	10	III	31897.76	00	$a^5F_3 - x^5D_4°$	U	3047.050	(1)		32809.11	00	$b^3G_5 - u^3F_4°$
V	3132.514	4n	V	31914.02	+05	$z^5D_4° - i^5D_3$	U	3046.930	(1)		32810.41	−02	$a^3H_5 - w^3H_6°$
V	3129.334	5	IV	31946.45	+01	$a^3F_4 - w^5D_3°$	S	3046.819	(−)		32811.60	−05	$a^3G_4 - w^1G_4°$
SS	3129.178	(1)		31948.04	+03	$z^7D_3° - f^5F_3$	V	3045.594	(1)		32824.80	00	$a^3H_4 - w^3H_5°$
U	3128.901	1	IV	31950.87	−04	$a^3F_3 - y^5S_2°$	G	3045.077	5	III	32830.37	+03	$a^5F_4 - y^7P_3°$
C	*3125.653	15	III	31984.07	−01 / +02	$a^5F_2 - x^5D_3°$ / $z^7D_5° - e^7G_4$	G	3042.666	15	III	32856.39	+06	$a^5F_2 - x^5F_3°$
U	3124.099	(1)		31999.98	−08	$z^7D_1° - e^5P_1$	G	3042.020	15	III	32863.36	+02	$a^5F_1 - x^5F_2°$
U	3123.353	(1)		32007.62	−08	$z^7D_4° - e^7S_3$	V	3041.745	15	III	32866.33	−07	$a^5F_4 - x^5F_4°$
R	3122.665	(−)		32014.68	+07	$a^3G_4 - 12_5°$	V	3041.639	10	IV	32867.48	−02	$a^3F_3 - y^3G_4°$
W	3121.76	(1)		32023.96	+01	$a^5P_1 - w^3P_0°$	C	3040.428	15	III	32880.57	−02	$a^5F_4 - x^5F_5°$
							V	3039.322	(2)		32892.53	−02	$a^3H_5 - y^3I_6°$
							V	3037.782	2	IVA	32909.21	−02	$a^5F_2 - z^5S_2°$
							A	3037.388	80R	I	32913.47	+01	$a^5D_1 - y^5D_2°$
							W	3034.51	(2n)		32944.69	−27	$a^3F_2 - x^5G_3°?$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Wave Number Observed	o—c	Desig
U	3033.101	(1)		32959.99	+02	$a^3P_1 - u^3D_1^\circ$
G	3031.638	15	III	32975.90	00	$a^5F_1 - x^5F_1^\circ$
G	3031.213	12	IV	32980.52	+02	$a^3H_4 - w^3H_4^\circ$
S	3030.757	(—)		32985.48	+07	$b^3G_4 - x^3I_5^\circ$
C	3030.149	15	IV	32992.10	+06	$a^3H_5 - w^3H_5^\circ$
V	3029.237	3	IV	33002.08	+01	$a^3F_3 - y^3G_3^\circ$
G	3026.462	15	III	33032.29	+03	$a^5F_2 - x^5F_2^\circ$
K	3025.843	50R	I	33039.05	00	$a^5D_0 - y^5D_1^\circ$
U	3025.638	15	IV	33041.29	+02	$a^3H_6 - w^3H_6^\circ$
V	3025.283	3	III	33045.16	+05	$a^5F_4 - y^7P_4^\circ$
C	3024.033	15r	IA	33058.82	—01	$a^5D_1 - z^3P_2^\circ$
S	3023.583	(—)		33063.74	—07	$a^5P_3 - x^1G_4^\circ$
G	3021.074	150R	I	33091.20	—01	$a^5D_3 - y^5D_3^\circ$
U	3020.640	200R	I	33095.96	00	$a^5D_4 - y^5D_4^\circ$
U	3020.487	100R	II	33097.63	+04	$a^5D_2 - y^5D_2^\circ$
U	3019.290	(1)		33110.75	—03	$a^3H_4 - y^3I_5^\circ$
G	3018.983	15r	III	33114.12	+06	$a^5F_3 - x^5F_3^\circ$
U	3018.134	(1)		33123.44	+05	$a^3H_6 - y^3I_5^\circ$
G	3017.628	15r	IA	33129.00	00	$a^5D_1 - y^5D_1^\circ$
G	3016.186	12	III	33144.83	+01	$a^5F_2 - x^5F_1^\circ$
C	3015.913	4	IV	33147.83	+09	$a^3H_5 - w^3H_4^\circ$
U	3014.175	3	IV	33166.92	—03	$a^5F_3 - z^5S_2^\circ$
S	3014.120	(—)		33167.54	—08	$b^3G_5 - v^1G_4^\circ$
G	3011.482	7	IV	33196.60	00	$a^3G_3 - v^3H_4^\circ$
C	3009.570	25r	II	33217.69	00	$a^5F_4 - x^5F_4^\circ$
V	3009.098	3	IV	33222.90	+02	$a^3H_6 - w^3H_5^\circ$
G	3008.139	60R	I	33233.50	+01	$a^5D_1 - y^5D_0^\circ$
U	3007.281	12r	I	33242.97	+01	$a^5D_2 - z^3P_2^\circ$
U	3007.145	8	III	33244.47	—01	$a^3F_4 - x^3D_3^\circ$
G	3005.302	3	IV	33264.85	+01	$a^3H_6 - y^3I_7^\circ$
U	3004.620	(1)		33272.41	+12	$a^3F_3 - x^5G_4^\circ$
V	3004.119	(2)		33277.96	—06	$a^3H_5 - y^3I_5^\circ$
C	3003.031	10	III	33290.01	+02	$a^5F_3 - x^5F_2^\circ$
SS	3001.663	(1)		33305.18	—08	$c^3P_2 - t^3F_3^\circ$
G	3000.950	100R	I	33313.10	—02	$a^5D_2 - y^5D_1^\circ$
G	3000.452	8	III	33318.63	+03	$a^3F_4 - y^3G_5^\circ$
A	2999.512	30R	II	33329.07	—02	$a^5F_5 - x^5F_5^\circ$
G	2996.386	5	IV	33363.84	00	$a^3P_1 - v^3P_2^\circ$
U	2995.838	(1)		33369.91	—05	$b^3G_3 - t^3F_2^\circ$
U	2994.507	}100R	I {	33384.77	—05	$a^5D_0 - z^3P_1^\circ$
G	2994.427			33385.66	00	$a^5D_3 - y^5D_2^\circ$
C	2990.392	6	IV	33430.70	—02	$a^3G_4 - v^3H_5^\circ$
W	2989.4	(1)		33441.8	—1	$a^3F_2 - w^5P_1^\circ?$
S	2988.942	(—)		33446.91	+04	$a^3G_4 - v^3H_4^\circ$
G	2988.468	2	IV	33452.23	+03	$a^3F_4 - y^3G_4^\circ$
A	2987.292	10	III	33465.40	+05	$a^5F_4 - x^5F_3^\circ$
U	§2986.653	(1)		33472.56	00	$a^3H_6 - z^1I_5^\circ$
G	2986.456	3	III	33474.77	+01	$a^5D_1 - z^3P_1^\circ$
V	§2984.785	10	IV	33493.51	—10	$a^5F_5 - y^7P_4^\circ$
G	2983.574	125R	I	33507.10	—04	$a^5D_4 - y^5D_3^\circ$
U	§2982.234	(1)		33522.16	+15	$b^3G_4 - t^3F_3^\circ$
G	2981.852	6	IV	33526.46	—01	$a^5P_3 - t^5D_4^\circ$
A	2981.446	20r	I	33531.02	—01	$a^5D_3 - z^3P_2^\circ$
G	2980.532	5	IV	33541.29	+03	$a^3G_3 - w^1F_3^\circ$
U	2976.922	(1)		33581.97	—21	$z^7F_5^\circ - 1$
W	2976.5	(1)		33586.7	—1	$a^3F_4 - y^3G_3^\circ$
G	2976.126	5	IV	33590.95	+03	$a^3P_2 - u^3D_3^\circ$
W	2974.78	(1)		33606.15	—01	$z^7F_5^\circ - 2$
U	2973.237	60R	I	33623.59	—02	$a^5D_3 - y^5F_4^\circ$
U	2973.134	60R	I	33624.75	—02	$a^5D_2 - y^5F_3^\circ$
G	2972.277	3	IV	33634.45	+01	$a^5P_3 - t^5D_3^\circ$
G	*2970.106	40R	I	33659.00	+11 —10	$a^5D_2 - z^3P_1^\circ$ $a^5D_1 - y^5F_2^\circ$
G	2969.474	10	I	33666.19	00	$a^5F_5 - x^5F_4^\circ$
U	2969.362	5	II	33667.46	—05	$a^5D_1 - z^1P_0^\circ$

Ref	λ I A	Int	T C	Wave Number Observed	o—c	Desig
U	2968.481	(2)		33677.46	+01	$a^3P_1 - z^1P_1^\circ$
G	2966.901	125R	II	33695.39	—03	$a^5D_4 - y^5F_5^\circ$
U	2966.26	(2)		33702.68	+02	$a^5P_1 - t^5D_2^\circ$
U	2965.811	2	IV	33707.77	—06	$a^3H_5 - 9_4^\circ$
A	2965.255	20	II	33714.09	—01 —03	$a^5D_0 - y^5F_1^\circ$ $(a^3G_5 - v^3H_5^\circ)$
U	2963.71	(1n)		33731.67	—08	$z^7F_3^\circ - 3$
W	2962.11	(2)		33749.89	—03	$a^3F_4 - x^5G_5^\circ$
U	2961.70	(1)		33754.56	+12	$a^5P_3 - v^3F_4^\circ$
U	2960.666	(2)		33766.35	—09	$b^3G_5 - t^3F_4^\circ$
U	2960.299	1	IV	33770.53	+02	$a^3P_0 - v^3P_1^\circ$
C	2959.992	10	IV	33774.03	—01	$a^3G_5 - v^3H_6^\circ$
G	2959.682	5		33777.57	—06	$z^7F_6^\circ - 1$
U	2957.491	(2)		33802.60	00	$a^3P_2 - t^3D_1^\circ?$
A	2957.365	30R	II	33804.04	00	$a^5D_1 - y^5F_1^\circ$
U	2956.86	(2n)		33809.81	00	$a^3G_5 - x^1H_5^\circ$
U	2956.71	(1)		33811.52	+27	$a^5P_3 - t^5D_3^\circ$
G	2954.651	5	IV	33835.08	+01	$a^5P_2 - t^5D_3^\circ$
A	2953.940	50R	II	33843.23	00	$a^5D_2 - y^5F_2^\circ$
U	2953.486	5	IV	33848.43	+04	$a^3G_3 - s^3G_2^\circ$
G	2950.240	20n	IV	33885.67	—02	$a^5P_3 - 5^\circ$
U	2948.733	(2)		33902.99	—06	$a^5P_2 - t^5D_2^\circ$
U	2948.433	4	IV	33906.44	+05	$a^3G_4 - s^3G_4^\circ$
G	2947.877	60R	I	33912.83	—01	$a^5D_3 - y^5F_3^\circ$
U	2947.363	(2)		33918.74	00	$a^3P_2 - u^3D_2^\circ$
V	2941.77	(1)		33983.24	—18	$z^7D_4^\circ - h^5D_3$
A	2941.343	15r	I	33988.16	—01	$a^5D_2 - y^5F_1^\circ$
G	2940.586	(3)		33996.92	+10	$z^7F_5^\circ - 3$
G	2939.072	(1)		34014.43	+08	$a^5P_1 - t^5D_0^\circ$
G	2937.806	10n	IV	34029.08	—06	$a^5P_2 - 7_2^\circ$
G	2936.904	60R	I	34039.53	—01	$a^5D_4 - y^5F_4^\circ$
W	2936.1	(1)		34048.9	+2	$a^3F_2 - w^3D_3^\circ$
U	2934.370	(1)		34068.93	00	$a^5P_3 - u^5F_3^\circ$
W	2931.8	(1)		34098.8	+1	$a^5G_4 - s^3G_3^\circ$
U	2931.420	(2)		34103.21	—05	$a^3H_4 - 10_5^\circ$
W	2930.6	(1)		34112.8	0	$z^7D_2^\circ - h^5D_1?$
V	2929.618	2	IV	34124.18	—02	$a^3F_2 - x^3F_3^\circ$
V	2929.118	6	IV	34130.01	—03	$b^3H_4 - t^3H_4^\circ$
A	2929.008	25r	I	34131.29	—01	$a^5D_3 - y^5F_2$
U	2928.753	(3)		34134.26	+02	$a^3P_3 - u^3D_1^\circ$
U	2928.105	(2)		34141.82	+05	$a^5P_3 - u^5P_3^\circ$
V	2925.899	4	IV	34167.56	—01	$a^3F_2 - w^3D_2^\circ$
G	2925.359	4	V	34173.86	—01	$a^3G_3 - u^3H_4^\circ$
W	2924.6	(1n)		34182.7	—2	$a^5P_1 - u^5P_2^\circ$
G	2923.851	7	IV	34191.49	+04	$a^3G_5 - s^3G_5^\circ$
G	2923.288	7	IV	34198.08	—01	$b^3H_5 - t^3H_5^\circ$
V	2922.62	(1n)		34205.89	—06	$a^5P_3 - 7_2^\circ$
U	2922.383	(1)		34208.66	—02	$a^3F_3 - u^3D_1^\circ$
C	2920.691	5	IV	34228.48	—02	$a^3F_2 - x^3F_2^\circ$
U	2920.29	(1)		34233.18	—07	$a^5P_0 - t^5P_1^\circ$
G	2919.838	(2)		34238.47	+03	$z^7D_4^\circ - g^7D_5$
V	2918.354	3	IV	34255.89	+01	$a^3P_1 - v^3P_1^\circ$
G	2918.023	10	IV	34259.77	+02	$b^3H_6 - t^3H_6^\circ$
G	2914.305	3	IV	34303.48	—04	$a^3F_2 - w^3D_1^\circ$
V	2912.257	3	IV	34327.60	—03	$a^3F_3 - u^5D_2^\circ$
A	2912.158	20r	I	34328.77	+01	$a^5D_4 - y^5F_3^\circ$
U	2910.930	(3)		34343.25	—05	$a^3G_3 - u^3F_4^\circ$
U	2909.313	(1)		34362.34	+08	$a^3H_5 - t^3G_5^\circ$
V	2908.864	(2)		34367.64	+06	$z^7D_3^\circ - g^7D_4$
G'	*2907.518	5	V	34383.56	+3 +04	$a^5P_2 - u^5P_1^\circ$ $a^3G_4 - u^3H_5^\circ$
U	2905.57	(1)		34406.60	+01	$b^3H_5 - t^3H_4^\circ$
G	2901.910	5	IV	34450.00	—01	$z^7D_5^\circ - g^7D_5$
G	2901.381	5	IV	34456.27	—02	$a^3F_3 - w^3D_3^\circ$
C	2899.416	8	IV	34479.63	+01	$a^3P_2 - 8_1^\circ$

TABLE B—(*Continued*)

Ref	λ I A	Int	T C	Wave Number Observed	o—c	Desig	Ref	λ I A	Int	T C	Wave Number Observed	o—c	Desig
W	2897.6	(1)		34501.2	0	$z^7D_2{}^\circ - g^7D_3$	A	2832.436	25r	II	35294.94	+01	$a^5F_3 - y^5G_4{}^\circ$
C	2895.035	8	III	34531.80	—02	$a^3F_3 - x^3F_2{}^\circ$	G	2828.808	7	III	35340.21	+03	$a^5F_2 - z^5H_3{}^\circ$
C	2894.505	10	III	34538.12	+01	$a^3P_2 - v^3P_2{}^\circ$	G	2827.892	5	III	35351.65	—01	$a^5D_3 - z^3G_4{}^\circ$
V	2893.882	2	IV	34545.56	—03	$a^3F_3 - z^3H_4{}^\circ$	W	2827.67	(2n)		35354.43	—05	$a^3G_5 - x^3I_6{}^\circ$
V	2893.763	1	IVA	34546.98	+02	$a^5F_3 - x^5P_3{}^\circ$	G	2826.50	(3)		35369.06	—03	$a^3F_3 - v^5F_4{}^\circ$
G	2892.479	(1)		34562.32	+16	$z^7D_4{}^\circ - g^7D_4$	U	§2825.995	(2)		35375.38	—01	$a^5D_2 - z^3G_3{}^\circ$
W	2891.73	(2)		34571.26	—02	$b^3H_6 - q^3G_5{}^\circ$	V	2825.687	6	II	35379.23	—01	$a^5D_4 - z^3G_5{}^\circ$
U	2891.410	(1)		34575.09	—10	$a^3F_3 - w^3D_2{}^\circ$	G	2825.557	20	II	35380.87	00	$a^5F_3 - z^5H_4{}^\circ$
U	2890.868	(2)		34581.57	—12	$a^3D_3 - q^3G_2{}^\circ$	U	2824.70	(2)		35391.60	00	$a^3G_3 - t^3F_3{}^\circ$
V	2889.991	(2)		34592.07	00	$z^7D_1{}^\circ - g^7D_2$	A	2823.276	20	II	35409.45	+01	$a^5F_3 - y^5G_3{}^\circ$
W	2889.89	(3)		34593.28	+18	$a^3H_5 - t^3G_4{}^\circ$	U	2821.63	(1)		35430.10	—05	$a^3P_2 - v^3P_1{}^\circ$
U	2887.961	(1)		34616.38	—04	$a^3H_5 - t^3G_4{}^\circ$	G	2820.801	2	IV	35440.51	+02	$a^5D_3 - z^5G_2{}^\circ$
G	2887.806	5	V	34618.24	00	$a^3G_5 - u^3H_6{}^\circ$	W	2819.5	(2)		35456.9	0	$b^3F_4 - s^3G_3{}^\circ$
W	2887.36	(1)		34623.59	+01	$a^3H_5 - 12_5{}^\circ$	G	§2819.286	(1)		35459.56	+26	$a^3G_3 - t^3F_2{}^\circ$
G	2886.316	3	IV	34636.11	—01	$a^3F_3 - x^3F_2{}^\circ$	G	2817.505	6	III	35481.98	+01	$a^5F_3 - y^5G_2{}^\circ$
V	2883.748	4	V	34666.95	+03	$a^3G_5 - u^3H_6{}^\circ$	G	2815.506	3	IV	35507.17	00	$a^3F_2 - w^3G_3{}^\circ$
G	2880.575	2	IV	34705.14	+04	$a^5F_1 - x^5P_2{}^\circ$	G	2815.017	(1)		35513.34	—05	$a^3P_2 - 10_2{}^\circ$
U	2879.461	(1)		34718.56	—06	$a^3P_1 - t^5P_1{}^\circ$	A	2813.288	30R	II	35535.15	+01	$a^5F_4 - y^5G_5{}^\circ$
C	2877.300	8	III	34744.64	+05	$a^3F_4 - u^5D_4{}^\circ$	U	2812.31	(1)		35547.51	—07	$a^3F_2 - x^3P_1{}^\circ$
G	§2875.302	5	IV	34768.78	+01	$a^3F_4 - u^5D_3{}^\circ$	G	2812.042	(1)		35550.90	—02	$a^3G_4 - t^3F_1{}^\circ$
W	2874.89	(3)		34773.76	+03	$z^7D_5{}^\circ - g^7D_4$	U	2811.160	(1n)		35562.06	+04	$a^3F_3 - v^5F_3{}^\circ$
C	2874.172	10	I	34782.44	—01	$a^5D_4 - z^5G_5{}^\circ$	G	2808.328	2	III	35597.91	00	$a^5F_3 - z^5H_3{}^\circ$
U	2873.655	(2)		34788.70	—05	$b^5F_4 - v^3H_5{}^\circ$	U	2807.96	(1)		35602.58	+04	$a^3F_4 - v^5P_2{}^\circ$
W	2872.5	(1)		34802.7	0	$b^3P_2 - t^3F_2{}^\circ$	U	2807.245	2	III	35611.65	00	$a^5D_4 - z^5G_5{}^\circ$
G	2872.333	7	III	34804.71	+02	$a^5F_3 - x^5P_3{}^\circ$	C	2806.984	20	II	35614.96	+08	$a^5F_4 - z^5H_5{}^\circ$
U	2871.73	(1)		34812.02	—05	$a^3H_4 - t^3G_3{}^\circ$	W	2806.5	(1n)		35621.1	0	$z^7F_6{}^\circ - g^5G_5$
U	2871.31	(1)		34817.11	—17	$z^7F_4{}^\circ - i^5D_3$	G	2806.072	(1)		35626.54	—06	$a^3P_2 - 11_3{}^\circ$
U	2869.833	(2)		34835.03	—20	$z^7D_2{}^\circ - g^7D_1$	G	2805.808	(1)		35629.88	+04	$a^3F_4 - v^5F_5{}^\circ$
A	2869.308	10	I	34841.41	00	$a^5D_3 - z^5G_4{}^\circ$	V	2804.865	(2)		35641.86	—03	$a^3G_4 - t^3F_3{}^\circ$
G	§*2868.454	3	IV	34851.78	{+06 / +07}	$a^3P_2 - z^1P_1{}^\circ$ / $z^7F_5{}^\circ - i^5D_4$	A	2804.521	20	II	35646.23	+01	$a^5F_4 - y^5G_4{}^\circ$
G	2868.213	(1)		34854.71	+03	$z^7D_3{}^\circ - g^7D_2$	G	2803.613	(2)		35657.78	00	$a^3H_4 - v^3H_4{}^\circ$
U	2867.880	(1)		34858.76	—01	$a^3F_3 - 1_3{}^\circ$	G	2803.169	(1)		35663.43	—03	$a^5D_3 - z^3G_3{}^\circ$
G	2867.560	3	IV	34862.64	+01	$a^3F_2 - w^5G_2{}^\circ$	C	2797.775	15	III	35732.18	+01	$a^5F_4 - z^5H_4{}^\circ$
G	2867.311	3.	IV	34865.68	—01	$a^3F_2 - x^3G_3{}^\circ$	G	2796.871	(1)		35743.72	—03	$a^3F_3 - x^3P_2{}^\circ$
G	2866.624	7	II	34874.02	—01	$a^5F_2 - x^5P_2{}^\circ$	G	2795.540	(2)		35760.75	+01	$a^5F_4 - y^5G_3{}^\circ$
C	2863.864	8	I	34907.63	—02	$a^5D_2 - z^5G_3{}^\circ$	G	2795.006	3	III	35767.58	—01	$a^5D_4 - z^3G_4{}^\circ$
G	2863.429	8	III	34912.94	—01	$a^3F_4 - x^3F_4{}^\circ$	C	2794.700	(1)		35771.49	+02	$a^5F_3 - w^5D_4{}^\circ$
G	2862.496	4	IV	34924.32	—01	$a^5F_1 - x^5P_1{}^\circ$	U	2794.157	(1)		35778.44	—22	$a^5P_3 - 9_4{}^\circ$
G	2858.896	5	II	34968.29	00	$a^5D_1 - z^5G_2{}^\circ$	G	2792.397	1	III	35800.99	+02	$a^3F_3 - w^3G_4{}^\circ$
W	§2857.20	(1)		34989.05	+13	$a^3P_1 - v^3P_2{}^\circ$	G	2791.786	(2)		35808.82	+07	$a^3H_5 - v^3H_5{}^\circ$
U	2853.774	(3)		35031.05	+01	$b^3F_3 - s^3G_4{}^\circ$	G	2789.803	(3)		35834.28	—04	$a^3G_5 - t^3F_4{}^\circ$
V	2853.685	(2)		35032.14	—03	$a^3F_4 - z^3H_5{}^\circ$	G	2789.477	(2)		35838.47	00	$a^5P_3 - t^5P_3{}^\circ$
G	2852.952	(1)		35041.14	+16	$a^3F_4 - w^3D_3{}^\circ$	G	2788.106	30	II	35856.09	—02	$a^5F_5 - y^5G_6{}^\circ$
A	2851.798	15r	II	35055.32	00	$a^5F_1 - y^5G_2{}^\circ$	U	2787.935	5	II	35858.29	—07	$a^3G_4 - x^3G_5{}^\circ$
W	2851.52	(2)		35058.74	—09	$b^3F_2 - s^3G_3{}^\circ$	U	2787.12	(1)		35868.77	00	$a^3H_5 - v^3H_6{}^\circ$
G	2848.713	5	III	35093.28	+30	$a^5F_2 - x^5P_1{}^\circ$	U	2786.18	(1)		35880.88	—08	$a^5P_1 - v^3P_1{}^\circ$
G	2846.830	3	IV	35116.50	—02	$a^3F_4 - x^3F_3{}^\circ$	U	2784.346	(2)		35904.51	—03	$a^3H_5 - x^1H_5{}^\circ$
U	2845.714	(2)		35130.26	—02	$a^3F_4 - z^3H_4{}^\circ$	U	2784.017	(2)		35908.75	—06	$b^3F_3 - u^3F_3{}^\circ$
C	2845.595	8	III	35131.74	—02	$a^5F_3 - x^5P_2{}^\circ$	U	2782.055	(1)		35934.07	—04	$a^5P_2 - y^1F_3{}^\circ$
U	2845.544	(1)		35132.37	+03	$a^3F_3 - w^5G_2{}^\circ$	C	2781.835	4	III	35936.92	+02	$a^5F_2 - w^5D_3{}^\circ$
G	2843.977	20r	II	35151.72	00	$a^5F_2 - y^5G_3{}^\circ$	U	2780.700	1	III	35951.58	—04	$b^3F_4 - u^3F_4{}^\circ$
U	2843.923	(3)		35152.39	—03	$a^5D_2 - z^5G_2{}^\circ$	A	2778.221	20	III	35983.66	+02	$a^5F_5 - y^5G_5{}^\circ$
G	2843.631	10	III	35155.99	+01	$a^5F_4 - x^5P_3{}^\circ$	G	§2774.730	3	III	36028.93	+01	$a^5F_1 - w^5D_2{}^\circ$
U	2840.932	(3)		35189.39	+08	$a^5P_2 - v^3P_2{}^\circ$	U	2774.15	(1)		36036.46	+20	$a^5P_2 - x^1F_3{}^\circ$
G	2840.422	6	II	35195.72	00	$a^5D_3 - z^5G_3{}^\circ$	U	2773.907	(1)		36039.62	—07	$a^3H_6 - v^3H_5{}^\circ$
A	2838.120	10	III	35224.26	+01	$a^5F_2 - y^5G_2{}^\circ$	W	2772.86	(2)		36053.22	+01	$b^3G_4 - r^3G_4{}^\circ$
G	2836.315	(1)		35246.67	—07	$z^7F_6{}^\circ - h^7D_5$	G	2772.113	1	III	36062.94	+06	$a^5D_2 - y^5P_3{}^\circ$
G	2835.948	(1)		35251.24	+01	$a^3F_3 - x^3G_4{}^\circ$	V	2772.083	20	II	36063.33	—05	$a^5F_5 - z^5H_5{}^\circ$
G	2835.457	6	I	35257.33	—01	$a^5D_4 - z^5G_4{}^\circ$	G	2770.695	(1)		36081.39	+04	$a^5P_2 - v^3P_1{}^\circ$
G	2834.755	(2)		35266.07	—01	$b^3F_4 - s^3G_5{}^\circ$	G	2769.670	1	III	36094.74	+02	$a^5F_5 - y^5G_4{}^\circ$
U	*2834.414	(1)		35270.31	{—02 / +06}	$a^3F_2 - v^5F_2{}^\circ$ / $a^3F_3 - w^5G_3{}^\circ$	G	2769.297	(6)		36099.60	—01	$a^3H_6 - v^3H_6{}^\circ$
U	2834.177	(1)		35273.26	—05	$a^5F_3 - x^3G_4{}^\circ$	G	2768.432	(2)		36110.88	—04	$a^5P_3 - y^1F_3{}^\circ$
U	2833.401	(2)		35282.92	+01	$a^3P_2 - y^1F_3{}^\circ$	A	§2767.523	20	III	36122.75	—01	$a^5F_4 - w^5D_4{}^\circ$
							G	2766.909	2	III	36130.76	00	$a^5F_1 - w^5F_2{}^\circ$
							U	2766.03	(1)		36142.24	+10	$b^3F_4 - u^3F_3{}^\circ$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig
U	2765.70	(1)		36146.56	−15	$a^3F_4 - v^5F_3^\circ$
G	2764.323	3	III	36164.56	+04	$a^5P_2 - 10_3^\circ$
C	2763.108	4	III	36180.46	+02 / −20	$a^5F_2 - w^5F_3^\circ$ / $(a^5F_5 - z^5H_4^\circ)$
G	2762.770	(3)		36184.89	00	$a^5P_1 - t^5P_2^\circ$
G	2762.027	15	III	36194.62	−01	$a^5F_3 - w^5D_3^\circ$
G	§2761.780	18	III	36197.86	+02	$a^5F_2 - w^5D_2^\circ$
W	2761.5	(1)		36201.5	−3	$a^3P_1 - w^1D_2^\circ$
G	2759.814	4	III	36223.65	−05	$a^5F_1 - w^5F_1^\circ$
G	2757.315	10	III	36256.47	+01	$a^5F_1 - w^5D_1^\circ$
G	2756.329	20	I	36269.45	−01	$a^5D_1 - y^5P_2^\circ$
U	2756.264	(3)		36270.30	+03	$a^5D_3 - y^3F_4^\circ$
U	2755.184	(3)		36284.51	−01	$a^3H_5 - s^3G_4^\circ$
G	2754.427	2	III	36294.48	00	$a^5F_3 - w^5F_4^\circ$
G	2754.030	3	III	36299.71	+03	$a^5F_2 - w^5F_2^\circ$
G	2753.687	3	III	36304.23	−01	$a^5F_1 - w^5D_0^\circ$
G	2750.872	5		36341.38	+05	$a^5P_3 - 10_3^\circ$
U	2750.708	(1)		36343.55	−15	$a^5P_1 - t^5P_1^\circ$
G	2750.140	25r	II	36351.06	00	$a^5D_3 - y^5P_3^\circ$
G	2747.553	(3)		36385.29	+01	$a^5P_2 - t^5P_2^\circ$
C	§2746.982	20	III	36392.84	00 / +22	$a^5F_5 - z^5H_6^\circ$ / $(a^5F_2 - w^5F_1^\circ)$
G	2744.526	8	III	36425.42	+04	$a^5F_2 - w^5D_1^\circ$
G	2744.068	10	II	36431.50	00	$a^5D_0 - y^5P_1^\circ$
G	2743.564	3	III	36438.18	+01	$a^5F_3 - w^5F_3^\circ$
G	2742.406	30r	II	36453.57	−02	$a^5D_2 - y^5P_2^\circ$
U	2742.256	20	III	36455.56	−01	$a^5F_3 - w^5D_2^\circ$
U	2742.017	2	III	36458.75	−02	$a^5D_2 - y^3F_3^\circ$
U	2741.578	(2)		36464.57	−04	$a^3F_2 - w^3F_2^\circ$
W	2741.10	(3)		36470.94	+02	$c^3P_2 - q^3G_3^\circ$
G	2738.210	(2)		36509.42	+01	$a^5F_1 - v^5D_2^\circ$
V	§2737.643	(2)		36516.99	−03	$a^3H_6 - s^3G_5^\circ$
G	2737.310	20r	II	36521.43	−01	$a^5D_1 - y^5P_1^\circ$
G	§2736.960	(3)		36526.10	+04	$a^5F_2 - y^5S_2^\circ$
U	2735.614	8	III	36544.07	−02	$a^5P_2 - t^5P_1^\circ$
A	2735.475	8	III	36545.92	00	$a^5F_4 - w^5D_3^\circ$
G	2734.613	(1)		36557.44	+03	$a^5F_5 - w^5F_2^\circ$
G	2734.266	2	III	36562.08	−01	$a^5P_3 - t^5P_2^\circ$
G	2734.002	2	III	36565.62	−02	$a^5F_2 - v^5D_3^\circ$
G	2733.581	15	II	36571.25	−01	$a^5F_5 - w^5D_4^\circ$
U	2731.281	(2)		36602.04	00	$b^3F_2 - t^3F_3^\circ$
G	2730.981	2	III	36606.06	−01	$a^5F_1 - v^5D_1^\circ$
U	2728.973	(2)		36632.99	−06	$a^5D_1 - y^3F_2^\circ$
G	2728.819	2	III	36635.07	+02	$a^3H_4 - u^3H_4^\circ$
G	2728.020	3	III	36645.79	+02	$a^5F_4 - w^5F_4^\circ$
G	2726.237	(2)		36669.75	+01	$b^3F_2 - t^3F_2^\circ$
G	2726.054	6	III	36672.21	−01	$a^5F_1 - v^5D_0^\circ$
U	2725.805	(1)		36675.57	00	$b^3F_3 - t^3F_4^\circ$
U	2725.606	(2)		36678.24	−09	$a^5F_2 - v^5D_2^\circ$
G	§2724.951	10	III	36687.06	00	$a^5F_3 - v^5D_4^\circ$
A	2723.577	15	II	36705.57	00	$a^5D_2 - y^5P_1^\circ$
U	2722.032	(2)		36726.40	+09	$a^3F_4 - y^1G_4$
G	2720.902	40r	II	36741.65	−01	$a^5D_3 - y^5P_2^\circ$
U	2720.516	(1)		36746.86	+02	$a^5D_3 - y^3F_3^\circ$
G	2720.194	(3)		36751.21	+06	$a^5P_3 - 13_4^\circ$
G	2719.418	3	III?	36761.71	+06	$a^3H_5 - u^3H_5^\circ$
G	2719.027	60R	II	36766.98	−02 / +44	$a^5D_4 - y^5P_3^\circ$ / $(b^3F_3 - t^3F_3^\circ)$
C	2718.435	6	III?	36774.99	00	$a^5F_2 - v^5D_1^\circ$
G	2717.786	2	III	36783.78	−01	$a^5F_3 - y^5S_2^\circ$
G	2717.368	(1)		36789.43	−03	$a^5F_4 - w^5F_3^\circ$
U	§2716.41	(1)		36802.41	+12	$a^3H_5 - u^3H_4^\circ$
V	2716.259	(2)		36804.45	−03	$a^3H_4 - u^3F_4^\circ$
U	·2715.323	1	III	36817.14	−04	$a^5D_2 - y^3F_2^\circ$
G	2714.868	1	III	36823.32	−05	$a^5F_3 - v^5D_3^\circ$
U	2714.062	(2)		36834.25	+01	$b^3F_3 - t^3F_2^\circ$
C	2711.655	4	III	36866.94	+05	$a^5F_4 - w^5F_5^\circ$
G	2710.543	2	III	36882.07	+03	$a^3F_2 - v^3G_3^\circ$
G	2709.989	(2)		36889.60	+02	$z^7D_4^\circ - 2$
W	2709.7	(1)		36893.5	−1	$b^3G_5 - q^3G_5^\circ$
G	2708.570	4	IV	36908.93	−02	$b^3F_4 - t^3F_4^\circ$
C	2706.581	8	III	36936.04	−02	$a^5F_3 - v^5D_2^\circ$
G	2706.012	4	IV	36943.81	00	$a^3H_6 - u^3H_6^\circ$
U	2702.453	(2)		36992.47	−02	$a^3H_6 - u^3H_5^\circ$
G	2701.908	(2)		36999.92	00	$b^3F_4 - t^3F_3^\circ$
A	2699.107	6	III	37038.32	−03	$a^5F_4 - v^5D_4^\circ$
G	2697.019	2	III	37066.99	+02	$a^3F_3 - v^3G_4^\circ$
G	2696.284	(5)		37077.10	−07	$z^7D_5^\circ - 1$
U	2695.662	(2gn)		37085.65	−01	$z^7D_3^\circ - 3$
G	2695.032	1	III	37094.32	+05	$a^5F_5 - w^5F_4^\circ$
G	2694.536	(5)		37101.15	00	$z^7D_5^\circ - 2$
G	2694.222	(1)		37105.47	+22	$a^5D_3 - y^3F_2^\circ$
G	2692.658	(3)		37127.02	−14	$a^5F_1 - x^3D_2^\circ$
U	2692.247	(2)		37132.69	+01	$a^3F_4 - w^3F_4^\circ$
G	2690.067	2	III	37162.78	−01	$a^5D_4 - y^3F_3^\circ$
G	2689.827	2	III	37166.10	00	$a^3F_3 - y^3H_4^\circ$
A	2689.212	8	III	37174.60	+06	$a^5F_4 - v^5D_3^\circ$
U	2684.857	(2)		37234.89	−05	$a^5F_2 - x^3D_3^\circ$
G	2681.586	(2)		37280.31	+07	$z^7D_4^\circ - 3$
U	2680.91	(1)		37289.71	+05	$a^3F_3 - v^3G_3^\circ$
G	2680.452	2	III	37296.08	−01	$a^5F_2 - x^3D_2^\circ$
A	2679.062	10	III	37315.43	+04	$a^5F_5 - w^5F_5^\circ$
U	2674.71	(1)		37376.14	+07	$a^3P_2 - w^1D_2^\circ$
C	2673.213	1	III	37397.07	−04	$a^5F_1 - x^3D_1^\circ$
G	2669.492	2	IV	37449.20	−01	$a^3H_5 - x^3I_6^\circ$
G	2667.912	1	IIIA	37471.37	−01	$a^5D_2 - y^3D_3^\circ$
U	2666.970	3	III	37484.60	−06	$a^3F_4 - v^3G_5^\circ$
G	2666.811	8	III	37486.84	−01	$a^5F_5 - v^5D_4^\circ$
G	2666.398	2	III	37492.65	−02	$a^5F_3 - x^3D_3^\circ$
C	2662.056	3	III·	37553.79	−03	$a^5F_3 - x^3D_2^\circ$
U	2661.196	(2)		37565.93	−11	$a^5F_2 - x^3D_1^\circ$
G	2660.396	1	III	37577.22	−01	$a^5F_2 - y^3G_3^\circ$
G	2656.792	(2)		37628.19	00	$a^3F_4 - y^3H_5^\circ$
G	2656.145	3	III	37637.36	00	$a^3H_6 - x^3I_7^\circ$
U	2655.14	(1)		37651.61	−05	$a^3F_4 - v^3G_4^\circ$
C	2651.706	2	III	37700.36	−02	$a^5F_3 - y^3G_4^\circ$
C	2647.558	3	III	37759.43	−02	$a^5D_3 - y^3D_3^\circ$
G	2645.422	1	IIIA	37789.92	−02	$a^5D_1 - y^3D_2^\circ$
C	2643.997	8	III	37810.27	+01	$a^5F_1 - x^5G_2^\circ$
G	2641.645	4	III	37843.94	−02	$a^5F_4 - x^3D_3^\circ$
G	2636.477	1	III	37918.11	+03	$a^5F_4 - y^3G_5^\circ$
A	2635.808	8	III	37927.73	00	$a^5F_2 - x^5G_3^\circ$
G	2632.593	2	IIIA	37974.05	−01	$a^5D_2 - y^3D_2^\circ$
G	2632.238	4	III	37979.18	00	$a^5F_2 - x^5G_2^\circ$
G	§2629.579	2	III	38017.58	−11	$a^5D_0 - y^3D_1^\circ$
G	2623.532	5	III	38105.19	+02	$a^5F_3 - x^5G_4^\circ$
U	2623.366	2	III	38107.62	−01	$a^5D_1 - y^3D_1^\circ$
G	2618.708	2	III	38175.40	+02	$a^5D_4 - y^3D_3^\circ$
G	2618.018	5	III	38185.46	00	$a^5F_3 - x^5G_3^\circ$
G	2614.494	1	III	38236.91	00	$a^5F_3 - x^5G_2^\circ$
G	2612.771	2	III	38262.13	00	$a^5D_3 - y^3D_2^\circ$
G	2610.750	1	III	38291.74	−02	$a^5D_2 - y^3D_1^\circ$
G	2606.826	6	III	38349.38	−02	$a^5F_4 - x^5G_5^\circ$
G	2605.656	6	III	38366.60	+02	$a^5F_5 - y^3G_5^\circ$
U	2599.565	6	III	38456.49	+03	$a^5F_4 - x^5G_4^\circ$
U	2598.855	(1)		38466.99	−34	$a^3F_2 - 5^\circ?$
G	2595.422	(2)		38517.86	+01	$a^5F_1 - y^3P_0^\circ$
G	2594.150	1	III	38536.76	+01	$a^5F_4 - x^5G_3^\circ$
G	2593.510	(3)		38546.27	−01	$z^7D_5^\circ - h^7D_5$
U	2586.557	(1)		38649.88	−05	$a^3G_5 - t^3H_6^\circ$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig	Ref	λ I A	Int	T C	Wave Number Observed	o−c	Desig
A	2584.536	8	III	38680.10	+03	$a^5F_5 - x^5G_6°$	G	2496.992	(4)		40036.12	−07	$b^3F_4 - q^3G_5°$
G	2580.450	(2)		38741.34	00	$a^5F_2 - y^3P_2°$	C	2496.532	6	III	40043.48	+03	$a^5F_4 - w^5G_5°$
G	2580.062	(2)		38747.17	00	$a^5F_1 - y^3P_1°$	G	§2495.869	(5)		40054.12	+02	$a^5F_5 - z^3H_6°$
G	*2579.266	(4)		38759.12	{−11 / −02}	$a^5F_2 - u^5D_3°$ / $a^5F_4 - z^3I_5°$	G	2494.250	(5)		40080.13	−02	$a^5F_5 - z^3H_5°$
G	2576.688	4	III	38797.91	+01	$a^5F_5 - x^5G_5°$	G	*2493.998	(6)		40084.17	{+06 / −01}	$a^5F_3 - x^3G_4°$ / $a^5F_1 - v^5F_2°$
G	2572.752	(4)		38857.26	+03	$a^3F_2 - u^3G_3°$	W	2492.64	(2)		40105.95	−24	$a^5F_3 - x^3G_3°$
W	§2571.57	(3)		38875.11	+16	$a^3F_3 - 5°$	W	2492.17	(2)		40113.57	00	$b^3F_4 - q^3G_4°$
G	§2569.742	(4)		38902.77	−02	$a^5F_2 - u^5D_2°$	G	2491.983	(8)		40116.58	+04	$b^3F_4 - t^3H_4°$
G	2569.595	(6)		38904.99	+03	$a^5F_5 - x^5G_4°$	G	2491.155	20R	II	40129.92	−01	$a^5D_1 - x^5F_2°$
G	§2568.862	(5)		38916.09	−01	$a^5F_2 - y^3P_1°$	G	2490.642	30R	II	40138.18	+05	$a^5D_2 - x^5F_3°$
W	2567.86	(3)		38931.27	+03	$a^5P_1 - u^3F_2°$	G	2489.751	15r	II	40152.55	00	$a^5D_0 - x^5F_1°$
G	2564.555	(4)		38981.44	+02	$a^5F_1 - w^3D_2°$	G	2488.942	(6)		40165.58	00	$b^3F_4 - q^3G_3°$
V	2563.820	(2)		38992.62	−16	$a^5F_3 - u^5D_4°$	G	2488.143	40R	II	40178.49	−05	$a^5D_3 - x^5F_4°$
G	*2562.224	(5)	·	39016.91	{+11 / −05}	$a^5F_1 - u^5D_0°$ / $a^5F_3 - u^5D_3°$	G	2487.368	(4)		40191.01	−01	$a^5D_2 - z^5S_2°$
G	2561.852	(3)		39022.57	+04	$a^5F_1 - u^5D_1°$	C	2487.064	(12)		40195.92	+02	$a^5F_1 - v^5F_1°$
U	2561.262	(2)		39031.56	+12	$a^5F_2 - w^3D_3°$	G	2486.690	(10)		40201.97	00	$a^5F_3 - v^5F_3°$
G	2560.556	(4)		39042.32	−03	$a^5F_1 - x^3F_2°$	G	§2486.372	(10)		40207.11	−01	$a^5D_4 - y^7P_3°$
G	2557.268	(1)		39092.51	00	$a^3F_4 - x^3H_5°$	G	2485.989	(10)		40213.31	+02	$a^5F_4 - w^5G_4°$
G	2556.862	1	III	39098.72	+02	$a^5F_5 - z^3I_6°$	G	§2484.186	15R	II	40242.49	00	$a^5D_1 - x^5F_1°$
U	2556.298	(4)		39107.35	+08	$a^3F_3 - u^3G_4°$	G	2483.531	10	II?	40253.10	−01	$a^5F_2 - v^5F_2°$
G	2555.648	(1)		39117.29	−08	$a^5F_1 - w^3D_1°$	G	2483.270	60R	II	40257.32	−05	$a^5D_4 - x^5F_5°$
G	2552.827	(4)		39160.51	00	$a^5F_4 - u^5D_2°$	G	2479.775	20R	II	40314.06	00	$a^5D_2 - x^5F_2°$
G	2552.604	2	III	39163.94	−01	$a^5D_1 - y^7P_2°$	G	2479.478	6	III	40318.90	−01	$a^5F_2 - x^3P_2°$
G	2549.612	10r	III	39209.89	−01	$a^5D_3 - x^5D_4°$	G	2476.861	(2)		40361.49	+06	$a^5F_1 - x^3P_1°$
G	2545.977	10r	III	39265.87	−01	$a^5D_2 - x^5D_3°$	G	2476.654	3	III	40364.86	+04	$a^5F_2 - v^5F_1°$
G	2544.706	6	IV	39285.48	00	$b^3F_4 - r^3G_5°$	C	2474.813	(8)		40394.88	−02	$a^5F_3 - v^5F_3°$
G	2543.920	6	IV	39297.61	+07	$b^3F_3 - r^3G_4°$	G	2473.156	(3)	II	40421.96	+07	$a^5D_4 - y^7P_4°$
C	2542.101	6	IV	39325.74	00	$b^3F_2 - r^3G_3°$	V	2472.910	12R	II	40425.97	−23	$a^5D_3 - x^5F_3°$
G	2540.971	·10R	III	39343.22	−01	$a^5D_1 - x^5D_2°$	V	2472.875	(5)		40426.54	−08	$a^5D_2 - x^5F_1°$
U	2539.575	(1)		39364.85	+15	$a^5F_3 - x^3F_3°$	G	*2472.343	5	III	40435.24	{−16 / +13}	$a^5F_4 - x^3G_4°$ / $a^5F_5 - w^5G_6°$
G	2539.355	(7)		39368.26	+01	$a^5F_4 - u^5D_3°$	G	*2470.961	(4)		40457.86	{+38 / +01}	$a^5F_4 - x^3G_3°$ / $a^5F_4 - x^3G_5°$
G	2537.454	(5)		39397.75	+05	$a^3F_4 - u^3G_5°$	C	2468.878	4	III	40491.98	+03	$a^5F_5 - w^5G_5°$
U	§2536.738	(5)		39408.87	−20	$a^5F_3 - w^3D_2°$	G	2467.730	(5)		40510.83	00	$a^5F_4 - v^5F_2°$
G	2535.604	8r	III	39426.48	+01	$a^5D_0 - x^5D_1°$	C	2465.148	6	III	40553.25	−01	$a^5F_4 - v^5F_4°$
G	2535.128	(5)		39433.90	−02	$a^5F_2 - 1_2°$	G	§2463.728	(6)		40576.62	−02	$a^5F_3 - x^3P_2°$
G	2532.874	(2)		39468.98	−02	$a^5F_3 - x^3F_2°$	G	2462.645	10r	II	40594.46	−01	$a^5D_4 - x^5F_4°$
W	2531.5	(1)		39490.4	+2	$b^3F_3 - r^3G_3°$	G	2462.178	4	III	40602.15	+02	$a^5D_3 - x^5F_2°$
C	2530.694	3	III	39502.98	−14	$a^5D_2 - y^7P_3°$	C	2458.564	(4)		40661.83	+04	$a^5F_5 - w^5G_4°$
G	2529.833	3	III	39516.42	+01	$a^5D_1 - x^5D_1°$	C	2457.596	6	II	40677.86	+04	$a^5F_5 - v^5F_5°$
G	2529.134	10r	III	39527.35	−01	$a^5D_2 - x^5D_2°$	C	2453.475	5	III	40746.18	−01	$a^5F_4 - v^5F_3°$
W	2528.91	(3)		39530.85	−07	$b^3F_4 - r^3G_4°$	G	2452.590	(2)		40760.88	−02	$a^3H_4 - t^3H_5°$
G	2527.433	15r	II	39553.94	−01	$a^5D_3 - x^5D_3°$	A	§2447.708	4	II?	40842.17	+04	$a^5D_4 - x^5F_3°$
G	2524.290	8r	II	39603.20	+02	$a^5D_1 - x^5D_0°$	G	2445.210	(6)		40883.89	−01	$a^5F_5 - x^3G_4°$
G	2522.848	40R	II	39625.83	00	$a^5D_4 - x^5D_4°$	C	2443.871	(20)		40906.29	−05	$a^5F_5 - x^3G_5°$
G	2522.488	(6)		39631.48	−17	$a^5F_4 - z^3H_5°$	C	2442.567	(20)		40928.12	−02	$a^3H_5 - t^3H_6°$
G	2521.917	(7)		39640.46	00	$a^5F_4 - w^3D_3°$	G	2440.106	(15)		40969.40	00	$a^3H_4 - t^3H_4°$
C	2519.628	(10)		39676.46	−02	$a^5F_1 - w^5G_2°$	G	2439.743	(25)		40975.49	−01	$a^3H_6 - t^3H_6°$
G	2518.100	12r	II	39700.53	−01	$a^5D_2 - x^5D_1°$	C	2438.181	2	III	41001.74	−02	$a^5F_5 - v^5F_4°$
G	2517.658	(8)		39707.50	+01	$a^5F_2 - w^5G_3°$	G	2429.810	(4)		41142.98	+04	$a^5F_1 - v^3D_1°$
G	2516.569	(5)	·	39724.68	−02	$a^5F_3 - z^1G_4°$	G	*2423.094	(4)		41257.01	{+13 / −15}	$a^5F_2 - v^3D_2°$ / $a^5F_2 - w^3F_3°$
G	2516.249	(2)		39729.74	−03	$a^5F_4 - z^3H_4°$	G	2420.390	(2)		41303.10	+05	$a^5F_5 - w^3G_6°$
G	2515.848	(2)		39736.07	+06	$a^3F_3 - u^3D_2°$	G	2419.879	(2)		41311.82	−04	$a^5F_2 - v^3D_1°$
G	2513.847	(3)		39767.70	00	$b^3F_2 - q^3G_3°$	G	2419.058	(2)		41325.84	+05	$a^5F_4 - y^1G_4°$
G	2512.361	5r	III	39791.22	+03	$a^5D_2 - y^7P_3°$	G	2417.490	(2)		41352.64	+03	$a^3F_4 - 9_4°$
G	2510.833	15R	II	39815.43	00	$a^5D_3 - x^5D_2°$	G	*2408.045	(3)		41514.83	{+22 / −05}	$a^5F_3 - v^3D_2°$ / $a^5F_3 - w^3F_3°$
G	2508.751	(5)		39848.47	+01	$a^5F_2 - x^5G_3°$	U	2398.215	(1)		41684.98	+11	$a^3F_4 - y^1F_3°$
C	2507.899	6	III	39862.01	+01	$a^5F_3 - w^3G_4°$	C	2389.971	(25)		41828.75	−01	$a^5D_2 - x^5P_2°$
G	2506.569	(4)		39883.16	00	$b^3F_3 - t^3H_4°$	W	2385.9	(1)		41900.1	+3	$a^5F_3 - v^3G_4°$
G	2505.004	(3)		39908.08	+04	$b^3F_4 - t^3H_5°$	U	2381.831	(1)		41971.69	−01	$a^5D_1 - x^5P_2°$
G	2503.491	(3)		39932.19	−01	$b^3F_3 - q^3G_3°$	U	2377.991	(2)		42039.46	+06	$a^3F_3 - t^3G_3°$
G	2501.692	(6)		39960.91	−02	$a^5F_5 - x^3F_4°$							
G	2501.130	20R	II	39969.88	00	$a^5D_4 - x^5D_3°$							
G	§2498.895	10	IV	40005.62	−34	$a^5D_3 - y^7P_4°$							

TABLE B—(Continued)

Ref	λ I A	Int	T C	Observed	o−c	Desig
C	2374.517	(10)		42100.96	−02	$a^5D_0 - x^5P_1^\circ$
G	2373.618	(20)		42116.90	+07	$a^5D_3 - x^5P_3^\circ$
C	2371.428	(15)		42155.79	−04	$a^5D_2 - x^5P_2^\circ$
G	2369.454	(8)		42190.91	−01	$a^5D_1 - x^5P_1^\circ$
U	2365.509	(1n)		42261.27	+07	$a^3F_4 - t^5G_4^\circ$
U	2355.915	(1)		42433.35	−16	$a^5D_2 - y^5G_3^\circ$
G	§2355.327	(2)		42443.95	+05	$a^5D_3 - x^5P_2^\circ$
G	*2350.408	(5)		42532.77	+13 / +01	$a^5F_5 - v^3G_5^\circ$ / $a^5D_4 - x^5P_3^\circ$
U	2341.575	(1n)		42693.20	+19	$a^5D_3 - z^5H_4^\circ$
G	2329.637	(2)		42911.95	+03	$a^5D_4 - y^5G_5^\circ$
C	2320.356	(40)	III	43083.58	−03	$a^5D_3 - w^5D_4^\circ$
G	2317.892	(2)		43129.37	+09	$a^3F_2 - s^3G_3^\circ$
C	2313.102	(40)	III	43218.67	−03	$a^5D_2 - w^5D_3^\circ$
C	2308.997	(30)	III	43295.50	−01	$a^5D_1 - w^5D_2^\circ$
G	2306.378	(4)		43344.66	+05	$a^3F_3 - s^3G_4^\circ$
G	2306.164	(2)		43348.68	+07	$a^3F_3 - t^5D_4^\circ$
G	2304.727	(5)		43375.71	+05	$a^5F_2 - t^5D_3^\circ$
C	2303.579	(20)	II	43397.32	−03	$a^5D_1 - w^5F_2^\circ$
C	2303.422	(15)		43400.27	−08	$a^5D_0 - w^5F_1^\circ$
C	2301.682	(20)		43433.09	−02	$a^5D_0 - w^5D_1^\circ$
U	2300.599	(1)		43453.53	−10	$a^3F_4 - v^3H_5^\circ$
C	2300.140	(30)		43462.21	−03	$a^5D_2 - w^5F_3^\circ$
U	2299.453	(1)		43475.19	−16	$a^5F_1 - t^5D_2^\circ$?
C	2299.218	(25)	III	43479.63	−01	$a^5D_3 - w^5D_2^\circ$
G	2298.657	(6)		43490.24	−05	$a^5D_1 - w^5F_1^\circ$
U	2298.175	10r	II	43499.37	−17	$a^5D_4 - w^5D_4^\circ$
C	2297.785	(35d)		43506.74	−03	$a^5D_3 - w^5D_3^\circ$
C	2296.925	(15d)		43523.04	−01	$a^5D_1 - w^5D_1^\circ$
U	2295.535	(1n)		43549.37	+05	$a^3F_4 - x^1H_5^\circ$
C	2294.406	(25)		43570.81	−02	$a^5D_1 - w^5D_0^\circ$
C	2293.845	(25)		43581.46	−02	$a^5D_2 - w^5F_2^\circ$
X	2292.79	(1)		43601.52	+08	$a^5F_1 - 7_2^\circ$
C	2292.523	(30)		43606.60	−02	$a^5D_3 - w^5F_4^\circ$
G	2291.624	(4)		43623.70	−03	$a^5D_1 - y^5S_2^\circ$
C	*2291.122	(15)		43633.26	−13 / −08	$a^5F_3 - t^5D_3^\circ$ / $a^5F_2 - u^5F_3^\circ$
G	2290.771	(3)		43639.93	−01	$a^5F_4 - u^5F_5^\circ$
G	2290.546	(9)		43644.23	−04	$a^5F_2 - t^5D_2^\circ$
G	2290.064	(3)Ni?		43653.41	00	$a^5F_3 - u^5F_4^\circ$
G	2289.032	(10)		43673.09	+22	$a^5F_1 - u^5F_2^\circ$
C	2287.632	(15)		43699.82	−08	$a^5F_4 - t^5D_4^\circ$
C	2287.248	(30)		43707.16	−02	$a^5D_2 - w^5D_1^\circ$
C	2284.087	(40)		43767.63	−08	$a^5D_3 - w^5D_2^\circ$
C	2283.653	(12)		43775.95	−05	$a^5D_1 - v^5D_2^\circ$
G	2283.299	(9)		43782.74	+02	$a^5D_0 - v^5D_1^\circ$
G	2283.079	(9)		43786.96	−08	$a^5F_1 - t^5D_0^\circ$
G	2282.861	(4)		43791.14	00	$a^5F_1 - u^5F_1^\circ$
U	2281.986	(1)		43807.93	+07	$a^5D_2 - y^5S_2^\circ$
X	2281.66	(1)		43814.2	−3	$a^3F_4 - w^1F_3^\circ$
G	2280.222	(8)		43841.82	+03	$a^5F_2 - u^5F_2^\circ$
C	§2279.922	(10)		43847.58	+14	$a^5D_2 - v^5D_3^\circ$
U	2278.614	(2)		43872.75	+09	$a^5D_1 - v^5D_1^\circ$
G	2277.663	(12)		43891.07	00	$a^5F_3 - u^5F_3^\circ$
C	2277.098	(9)		43901.96	−04	$a^5F_3 - t^5D_2^\circ$
C	2276.025	(12)		43922.65	−05	$a^5D_4 - w^5D_3^\circ$
G	2275.593	(2)		43930.99	+03	$a^3F_4 - s^3G_5^\circ$
G	2275.189	(6)		43938.79	00	$a^5D_1 - v^5D_0^\circ$
C	*2274.088	(9)		43960.05	−01 / −08	$a^5F_2 - u^5F_1^\circ$ / $a^5D_2 - v^5D_2^\circ$
G	2272.816	(8)		43984.66	−02	$a^5F_4 - t^5D_3^\circ$
C	2272.067	(15)		43999.16	−04	$a^5D_3 - v^5D_4^\circ$
C	2271.781	(40)		44004.69	−01	$a^5F_4 - u^5F_4^\circ$
C	2270.860	(18)		44022.54	−01	$a^5D_4 - w^5F_4^\circ$
G	2269.093	(18)		44056.82	+03	$a^5D_3 - v^5D_1^\circ$

Ref	λ I A	Int	T C	Observed	o−c	Desig
G	2267.465	(15)		44088.45	+01	$a^5F_5 - u^5F_5^\circ$
G	2267.080	(9)		44095.93	00	$a^5D_3 - y^5S_2^\circ$
G	2266.903	(10)		44099.38	−14	$a^5F_3 - u^5F_2^\circ$
X	2265.61	(1)		44124.5	0	$a^5F_2 - u^5P_1^\circ$
C	2265.053	(20)		44135.39	−12	$a^5D_3 - v^5D_3^\circ$
C	2264.389	(45)		44148.32	−08	$a^5F_5 - t^5D_4^\circ$
U	2263.476	(6)		44166.14	−10	$a^5D_4 - w^5F_4^\circ$
G	2260.860	12	Fe II	44217.24	00	$(a^3F_3 - u^5P_2^\circ)$
U	2260.594	(2)		44222.44	+06	$a^3F_3 - u^3F_3^\circ$
C	2259.511	15		44243.63	−04	$a^5D_4 - w^5F_5^\circ$
U	2259.279	(1)		44248.11	−03	$a^5D_3 - v^5D_2^\circ$
U	2256.750	(1)		44297.76	+06	$a^3F_3 - u^3F_2^\circ$
C	2255.861	(45)		44315.21	+01	$a^5F_4 - u^5P_3^\circ$
G	2251.865	(12)		44393.84	+08	$a^5D_1 - x^3D_2^\circ$
G	2250.784	(10)		44415.16	+03	$a^5D_4 - v^5D_4^\circ$
C	2248.858	(25)		44453.20	00	$a^5F_5 - u^5F_4^\circ$
U	2247.461	(1)		44480.82	−08	$a^5F_5 - 4_4^\circ$
C	2245.651	(15)		44516.67	−07	$a^5D_2 - x^3D_2^\circ$
X	2245.14	(1)		44526.8	+1	$a^5F_2 - u^3D_1^\circ$
U	2243.911	(1)		44551.19	−25	$a^5D_4 - v^5D_3^\circ$
U	2242.579	(15)		44577.65	−24	$a^5D_2 - x^3D_2^\circ$
X	2241.85	(1)		44592.1	+3	$a^5F_4 - u^3D_3^\circ$
C	2240.627	(4)		44616.48	−02	$a^3F_4 - u^3F_4^\circ$
C	2238.259	(2)		44663.68	−02	$a^5D_1 - x^3D_1^\circ$
U	2237.814	(2n)		44672.56	+07	$a^3F_2 - t^3F_3^\circ$
U	2234.432	(2)		44740.16	−03	$a^3F_2 - t^3F_2^\circ$
C	2231.211	(15)		44804.75	−05	$a^5D_3 - x^3D_3^\circ$
U	2229.066	(5)		44847.85	+02	$a^5D_2 - x^3D_1^\circ$
U	2228.489	(1)		44859.46	+44	$a^5D_2 - y^3G_3^\circ$
C	2228.170	(10)		44865.88	−08	$a^5D_3 - x^3D_2^\circ$
G	2222.75	(7)		44975.1	+1	$a^3F_4 - v^1G_4^\circ$
U	2220.912	(2)		45012.50	−02	$a^5D_3 - y^3G_4^\circ$
U	2217.744	(1)		45076.78	−07	$a^5D_1 - x^5G_2^\circ$
U	2217.578	(1n)		45080.17	+06	$a^3F_3 - t^3F_3^\circ$
C	2211.234	(7)		45209.48	−05	$a^5D_2 - x^5G_3^\circ$
C	2210.686	(9)		45220.69	−05	$a^5D_4 - x^3D_3^\circ$
C	2207.068	(6)		45294.81	−05	$a^5D_4 - y^3G_5^\circ$
C	2201.117	(4)		45417.26	−05	$a^5D_3 - x^5G_4^\circ$
C	2200.723	(15)		45425.39	−09	$a^5D_1 - w^5P_3^\circ$
U	2200.370	(10r) / (5)		45432.67	+30	$a^5D_0 - w^5P_1^\circ$
U	2197.230	(1)		45497.59	−01	$a^5D_3 - x^5G_3^\circ$
U	2196.040	(50)		45522.24	−07	$a^5D_1 - w^5P_1^\circ$
C	2193.564	(2)		45573.62	−21	$a^3F_4 - t^3F_4^\circ$
U	2193.411	(2)		45576.80	−10	$a^3F_4 - s^3D_3^\circ$
G	2191.836	(60)		45609.55	−06	$a^5D_2 - w^5P_2^\circ$
C	2191.202	(10)		45622.74	−07	$a^5D_0 - z^3S_1^\circ$
U	2189.393	(1n)		45660.44	−17	$a^5F_5 - t^5P_3^\circ$
U	2189.183	(1)		45664.82	+02	$a^3F_4 - t^3F_3^\circ$
C	2187.192	(40)		45706.38	−06	$a^5D_2 - w^5P_1^\circ$
G	2186.890	(5)		45712.69	−06	$a^5D_1 - z^3S_1^\circ$
G	2186.483	(40)		45721.19	−02	$a^5D_3 - w^5P_3^\circ$
C	2186.241	(3)		45726.26	+08	$a^5D_4 - x^5G_5^\circ$
U	2183.465	(1)		45784.39	−05	$a^5D_1 - y^3P_0^\circ$
U	2181.133	(1n)		45833.33	+09	$a^5D_4 - x^5G_4^\circ$
C	2180.866	(4)		45838.94	−06	$a^5D_1 - y^3P_2^\circ$
U	*2178.073	(35)		45897.72	+04 / −16	$a^5D_3 - w^5P_2^\circ$ / $a^5D_2 - z^2S_1^\circ$
C	2176.837	(6)		45923.77	−05	$a^5D_0 - y^3P_1^\circ$
U	2176.396	(1)		45933.08	+02	$a^5F_3 - y^1F_3^\circ$
C	2173.212	(8)		46000.37	−08	$a^5D_1 - u^3D_2^\circ$
C	2172.581	(6)		46013.72	−04	$a^5D_1 - y^3P_1^\circ$
U	2172.137	(2)		46023.12	−01	$a^5D_2 - y^3P_2^\circ$
G	2171.292	(40)		46041.04	+01	$a^5D_3 - u^3D_3^\circ$
G	2166.769	(100)		46137.13	−01	$a^5D_4 - w^5P_3^\circ$

TABLE B—(Continued)

Ref	λ I A	Int	T C	Wave Number Observed	o—c	Desig
U	2165.537	(1n)		46163.38	−09	$a^5F_3 - 10_2^\circ$
C	2164.547	(7)		46184.49	−09	$a^5D_2 - u^5D_2^\circ$
C	2163.860	(6) (1)		46199.15	−03	$a^5D_0 - u^5D_1^\circ$
C	2161.577	(5)		46247.94	−07	$a^5D_1 - w^5D_2^\circ$
U	2160.236	(1)		46276.65	−10	$a^5F_3 - 11_2^\circ$
X	2159.92	(3)		46283.4	0	$a^5D_1 - u^5D_0^\circ$
U	2159.645	(4)		46289.30	+18	$a^5D_1 - u^5D_1^\circ$
U	2159.425	(2)		46294.02	00	$a^5D_0 - w^5D_1^\circ$
U	2158.922	(4)		46304.81	−11	$a^5D_3 - u^5D_4^\circ$
U	2158.622	(1) (1)		46311.25	+05	$a^5D_3 - y^5P_2^\circ$
C	2157.792	(5)		46329.06	−04	$a^5D_3 - u^5D_3^\circ$
U	*2155.238	(2)		46383.95	−28 / −01	$a^5F_2 - t^5P_2^\circ$ / $a^5D_1 - w^5D_1^\circ$
U	2155.012	(3)		46388.82	+05	$a^5D_2 - x^5F_3^\circ$
C	2154.458	(2)		46400.74	+15	$a^5F_5 - 9_4^\circ$
C	2153.004	(5)		46432.07	−07	$a^5D_2 - w^5D_2^\circ$
C	*2151.099	(3) (2)		46473.19	−06 / −08	$a^5D_2 - u^5D_1^\circ$ / $a^5D_3 - x^5F_4^\circ$
C	2150.182	(3)		46493.01	−06	$a^5D_3 - x^5F_2^\circ$
U	2149.416	(1)		46509.57	+18	$a^5F_3 - t^5G_4^\circ$
U	2149.170	(1)		46514.89	+13	$a^5F_4 - 10_3^\circ$
U	2148.394	(1n)		46531.69	+10	$a^5D_1 - 1_2^\circ$
U	2146.710	(2n)		46568.19	+10	$a^5D_2 - w^5D_1^\circ$
C	2145.188	(3)		46601.23	−08	$a^5D_3 - w^5D_3^\circ$
U	2144.576	(1)		46614.52	−03	$a^5F_3 - t^5G_3^\circ$
U	2142.141	(1n)		46667.51	+01	$a^5D_1 - y^5S_1^\circ$
C	2141.715	(1)		46676.79	−05	$a^5D_3 - x^5F_3^\circ$
U	2141.083	(1)		46690.56	−05	$a^5D_3 - z^5H_4^\circ$
U	2139.929	(2)		46715.74	+02	$a^5D_2 - 1_2^\circ$
C	*2139.695	(3) (2)		46720.85	00 / +64	$a^5D_4 - u^5D_4^\circ$ / $a^5D_3 - w^5D_2^\circ$
C	2138.589	(3)		46745.01	−02	$a^5D_4 - u^5D_3^\circ$
U	2133.311	(1)		46860.64	−04	$a^5F_4 - t^5G_4^\circ$
C	2132.015	(4)		46889.13	−08	$a^5D_4 - x^5F_4^\circ$
U	2130.417	(1)		46924.29	−29	$a^5F_4 - 13_4^\circ$
U	2126.212	(1)		47017.08	−16	$a^5D_4 - w^5D_3^\circ$
N	2122.188	1		47106.2	−3	$a^5D_4 - z^5H_4^\circ$
N	2119.125	5		47174.3	+2	$a^5D_3 - w^5G_4^\circ$
C	2115.168	20		47262.54	−09	$a^5D_2 - v^5P_3^\circ$
N	2114.588	25		47275.5	+1	$a^5D_1 - v^5P_2^\circ$
N	2113.08	20		47309.1	−1	$a^5F_5 - t^5G_4^\circ$
C	2112.966	25		47311.79	−03	$a^5D_0 - v^5P_1^\circ$
C	2110.233	30		47373.06	+51 / −02	$a^5D_0 - v^5F_1^\circ$ / $(a^5F_5 - 13_4^\circ)$
C	2108.955	30		47401.76	00	$a^5D_1 - v^5P_1^\circ$
N	2108.302	12		47416.4	−2	$a^5D_1 - x^5P_2^\circ$
N	2108.188	1p		47419.0	+7	$a^5D_3 - x^5G_3^\circ$
N	2108.139	12		47420.1	−1	$a^5D_4 - w^5G_4^\circ$
N	2106.380	25		47459.7	+2	$a^5D_2 - v^5P_2^\circ$
N	2106.260	20		47462.4	−1	$a^5D_1 - v^5F_1^\circ$
N	2103.964	1		47514.2	+1	$a^5D_3 - v^5F_4^\circ$
N	2103.048	25		47534.9	0	$a^5D_2 - v^5F_2^\circ$
N	2102.910	20		47538.0	+1	$a^5D_0 - x^5P_1^\circ$
C	2102.349	30		47550.69	−01	$a^5D_3 - v^5P_3^\circ$
C	2100.795	30		47585.86	−03	$a^5D_2 - v^5P_1^\circ$
N	2100.144	10		47600.6	−1	$a^5D_2 - x^5P_3^\circ$
N	2098.953	25		47627.6	−4	$a^5D_1 - x^3P_1^\circ$
N	2098.081	15p		47647.4	+8	$a^5D_2 - v^5F_1^\circ$
N	2095.451	1		47707.2	+2	$a^5D_3 - v^5F_3^\circ$
N	2093.660	40		47748.0	+4	$a^5D_3 - v^5P_2^\circ$
N	2090.862	20		47811.9	−3	$a^5D_2 - x^3P_1^\circ$
N	2090.380	30		47822.9	−1	$a^5D_3 - v^5F_2^\circ$
N	2087.525	25		47888.3	−5	$a^5D_3 - x^3P_2^\circ$
N	2084.117	50		47966.6	0	$a^5D_4 - v^5P_3^\circ$
N	2058.100	1		48572.9	0	$a^3F_4 - t^3H_5^\circ$
N	2047.241	2		48830.5	0	$a^3F_4 - q^3G_3^\circ$?
N	2016.512	5		49574.5	0	$a^5F_4 - v^1G_4^\circ$

λ Vacuum

Ref	λ I A	Int	T C	Wave Number Observed	o—c	Desig
N	1974.059	1		50657.0	−5	$a^5D_2 - t^5D_3^\circ$
N	1973.911	1		50660.8	0	$a^5D_3 - t^5D_4^\circ$
N	1970.771	0		50741.6	−3	$a^5D_1 - t^5D_2^\circ$
N	1964.043	20		50915.4	+3	$a^5D_2 - u^5F_3^\circ$
N	1963.629	15		50926.1	0	$a^5D_2 - t^5D_2^\circ$
N	1963.110	25		50939.6	+1	$a^5D_1 - u^5F_2^\circ$
N	1962.871	20		50945.8	+3	$a^5D_3 - t^5D_3^\circ$
N	1962.746	15		50949.0	+3	$a^5D_1 - t^5D_1^\circ$
N	1962.100 ·	30		50965.8	−8	$a^5D_3 - u^5F_4^\circ$
N	1962.031	25		50967.6	−2	$a^5D_0 - u^5F_1^\circ$
N	1961.236	20		50988.2	+2	$a^5D_2 - u^5P_3^\circ$
N	1960.129	25		51017.0	+3	$a^5D_4 - u^5F_5^\circ$
N	1958.739	15		51053.2	−4	$a^5D_1 - t^5D_0^\circ$
N	*1958.598	30		51056.9	−8 / −3	$a^5D_1 - u^5F_1^\circ$ / $a^5D_1 - u^5P_2^\circ$
N	1957.831	25		51076.9	+2	$a^5D_4 - t^5D_4^\circ$
N	1956.026	30		51124.1	+5	$a^5D_2 - u^5F_2^\circ$
N	*1955.690	20		51132.8	−1 / +6	$a^5D_2 - t^5D_1^\circ$ / $a^5D_0 - u^5P_1^\circ$
N	1952.997	20		51203.4	+2	$a^5D_3 - u^5F_3^\circ$
N	1952.596	30		51213.9	−2	$a^5D_3 - t^5D_2^\circ$
N	1952.262	20		51222.6	+4	$a^5D_1 - u^5P_1^\circ$
N	*1951.556	25		51241.2	−7 / −1	$a^5D_2 - u^5F_1^\circ$ / $a^5D_2 - u^5P_2^\circ$
N	1950.223	20		51276.2	+2	$a^5D_3 - u^5P_3^\circ$
N	1946.978	25		51361.6	+1	$a^5D_4 - t^5D_4^\circ$
N	1946.219	10		51381.7	+2	$a^5D_4 - u^5F_4^\circ$
N	1945.294	25		51406.1	−2	$a^5D_2 - u^5P_1^\circ$
N	1945.070	20		51412.0	+3	$a^5D_3 - u^5F_2^\circ$
N	1940.649	25		51529.2	−2	$a^5D_3 - u^5P_2^\circ$
N	1937.274	35		51618.9	−2	$a^5D_4 - u^5F_3^\circ$
N	1934.528	25		51692.2	+2	$a^5D_4 - u^5P_3^\circ$
N	1903.37	1		52538.4	+6	$a^5D_3 - s^3D_3^\circ$
N	1888.32	12n		52957.2	+1	$a^5D_2 - y^1F_3^\circ$
N	1887.761	14		52972.8	0	$a^5D_3 - t^5P_3^\circ$
G	1880.14	5		53187.6	+1	$a^5D_2 - 10_3^\circ$
N	1878.849	2		53224.1	−1	$a^5D_1 - t^5P_2^\circ$
N	1876.421	10		53292.9	−1	$a^5D_0 - t^5P_1^\circ$
N	1873.259	15		53382.9	−1	$a^5D_1 - t^5P_1^\circ$
N	1873.052	12		53388.8	+1	$a^5D_4 - t^5P_3^\circ$
N	1872.359	15 ·		53408.6	+3	$a^5D_2 - t^5P_2^\circ$
N	1866.815	10		53567.2	+1	$a^5D_2 - t^5P_1^\circ$
N	1866.07	12		53588.6	−3	$a^5D_3 - 11_3^\circ$
N	1863.54	0p		53661.2?	+1	$a^5D_4 - y^1F_3^\circ$
N	1862.318	15		53696.5	+1	$a^5D_3 - t^5P_2^\circ$
N	1855.58	15		53891.5	0	$a^5D_4 - 10_3^\circ$

NOTES TO TABLE B

* Blend.
§ Blend with *Fe* II.
( ) Masked.
** Notes by A. S. King as follows:

5204.582	Blend with *Cr*
4058.227	Blend with *Co*
3998.054	May be partly *Co*
3940.882	May be partly *Sr* and *Co*
3902.948	Blend with *Cr*
3786.176	Probably double
3753.610	Blend with *Ti*
3703.556	Blend with *V*
3605.450	Blend with *Cr* to violet
3369.549	Blend with *Ni*
3196.930	Blend with *Ni* to red
3134.111	Blend with *Ni*, but chiefly *Fe*
3092.778	Blend with *Al*

References for Wave-length and Intensity:

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B International Standards, *Trans. Internat. Astron. Union* 3: 86, 1928.

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R King, A. S., unpublished material.
S Dobbie, unpublished material.
SS Solar Spectrum Wave-length (SSb denotes that the line is blended in the solar spectrum).
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TABLE C

PREDICTED LINES OF FE I PRESENT IN THE SOLAR SPECTRUM

Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig	Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig
10987.02	1	fb	9099.16	+17	$b^3P_2 - z^3D_1°$	8950.217	−1	g	11169.85	−02	$y^5D_3° - e^5D_4$
10780.69	−2N	g	9273.30	+01	$b^3H_6 - z^3G_5°$	8931.76	−2N	g	11192.93	+03	$a^1G_4 - z^3G_4°$
10725.20	0	g	9321.28	−01	$b^3D_2 - y^3D_2°$	8922.643	−2	g	11204.37	+03	$x^5F_5° - f^5F_4$
10616.73	1	g	9416.52	+02	$b^3H_5 - z^3G_4°$	8905.989	0	f	11225.32	00	$x^5F_3° - e^5P_2$
10577.15	1	g	9451.75	−01	$b^3H_4 - z^3G_3°$	8902.926	−3	g	11229.18	+01	$x^5D_2° - e^7G_3$
10555.70	0	f	9470.95	−07	$w^5D_3° - g^5F_4$	8895.98	−3	g	11237.95	+03	$z^3G_4° - e^5F_5$
10388.77	−2	g	9623.14	−04	$w^5D_3° - h^5D_3$	8892.11	−3	f	11242.84	+03	$x^5F_4° - e^5P_3$
10379.04	−1	g	9632.16	−03	$a^5P_1 - z^5F_2°$	8887.07	−3N	f	11249.22	+04	$x^5D_3° - e^5G_3$
10364.05	0	f	9646.10	+08	$w^5D_3° - f^5P_2$	8878.775	−2	g	11259.73	−01	$y^5D_2° - e^5D_3$
10362.72	−1	f	9647.33	+01	$w^5D_2° - g^5F_3$	8878.271	−1	g	11260.36	−02	$b^3G_4 - z^3G_5°$
10333.21	−1	f	9674.88	+03	$d^3F_4 - u^5D_4°$	8834.025	−2	g	11316.76	+01	$y^5D_1° - e^5D_2$
10332.36	−1	g	9675.69	−02	$b^3D_1 - y^3D_1°$	8828.103	−3	g	11324.36	−02	$x^5D_3° - e^3D_3$
10311.96	−1	g	9694.82	−07	$a^3P_0 - z^5P_1°$	*8819.51	−3	g	11335.38	−04	$x^5D_1° - e^3D_2$
10307.46	−3N	f	9699.05	+02	$d^3F_4 - u^5D_3°$	8816.876	−2	f	11338.78	−02	$x^5D_2° - e^7S_3$
10283.87	−2	g	9721.30	00	$w^5D_1° - h^5D_1$	8805.19	−2	f	11353.82	+02	$x^5D_4° - e^5G_4$
10265.22	−2	g	9738.96	+01	$a^5P_1 - z^5F_1°$	8798.07	−3	g	11363.01	−03	$y^7P_3° - e^7S_3$
10156.56	0	g	9843.16	−05	$d^3F_4 - x^3F_4°$	8779.08	−2	g	11387.59	+06	$y^5D_0° - e^5D_1$
10155.19	1	g	9844.49	00	$a^5P_3 - z^5F_3°$	8767.68	−3Nd?	f	11402.40	−03	$z^5P_2° - X_3$
10149.13	−3	g	9850.37	−03	$x^5F_1° - f^5D_0$	8727.19	−3	g	11455.30	−11	$c^3F_2 - x^3D_3°$
10143.48	−3	f	9855.84	+12	$z^3D_3° - X_2$	8700.314	−2	g	11490.69	+04	$x^5D_3° - e^7G_3$
10137.14	−1	g	9862.01	−08	$x^5F_2° - f^5D_1$	8698.717	0	g	11492.80	00	$b^3G_4 - z^5G_3°$
10084.41	0	g	9913.58	+01	$d^3F_3 - x^3F_4°$	*8689.788	−1	g	11504.61	−09	$a^1G_4 - z^3G_3°$
10081.43	0	g	9916.51	−03	$a^3P_1 - z^5P_2°$	*8686.75	3	g	11508.63	+03	$x^5D_2° - e^3D_2$
10080.43	−1	f	9917.49	+01	$x^5F_1° - f^7D_1$	8680.82	−3	g	11516.49	−07	$c^3F_3 - x^3D_2°$
10070.58	−2	f	9927.20	00	$w^5D_0° - g^5F_1$	8679.646	2	gb	11518.05	−03	$y^7P_2° - e^7S_3$
10058.36	−3	f	9939.26	−08	$a^5P_3 - z^5F_1°$	8671.879	0	g	11528.36	−03	$x^5D_0° - e^5P_1$
10032.89	0	f	9964.49	−05	$w^5D_1° - f^5G_2$	8663.723	−1	g	11539.22	+01	$x^5D_0° - g^5D_3$
10019.81	0	f	9977.49	−05	$w^5D_2° - f^5G_3$	8656.672	−1	g	11548.61	−02	$x^5D_0° - e^3D_1$
10016.76	2	f	9980.54	−09	$x^5F_2° - f^7D_2$	8654.436	−1	g	11551.60	−05	$a^3D_2 - y^3D_3°$
9970.23	−2	g	10027.11	+02	$c^3P_2 - z^3P_1°$	8652.475	−1	g	11554.21	+02	$y^5D_3° - e^5D_3$
9967.30	3	fb	10030.06	+02	$x^5F_2° - f^7D_1$	8632.424	0	g	11581.06	+01	$y^5D_4° - e^5D_4$
9953.51	−1	g	10043.95	−07	$w^5D_3° - h^5D_2$	8616.284	3	g	11602.75	−02	$x^5D_4° - e^7G_5$
9951.19	0	g	10046.30	−04	$w^5D_4° - h^5D_3$	8613.946	2	g	11605.89	−02	$x^5D_2° - e^5P_3$
9950.62	0	g	10046.87	+09	$d^3F_4 - x^3F_3°$	8610.609	2	g	11610.40	+02	$z^3G_4° - e^5F_4$
9924.41	0	f	10073.40	−06	$a^1D_2 - y^3D_2°$	8607.075	1	g	11615.16	00	$x^5D_1° - e^5P_1$
9920.54	−1	g	10077.33	−09	$x^5F_1° - e^7F_1$	8592.119	−2	g	11635.38	−02	$x^5D_1° - e^3D_1$
9913.19	2	g	10084.81	00	$x^5F_6° - e^7F_6$	8584.791	−2	g	11645.31	+03	$x^5D_1° - g^5D_2$
9878.200	1	g	10120.53	−02	$x^5F_5° - f^7D_5$	8576.48	−3	f	11656.60	+03	$d^3F_4 - y^1G_4°$
9800.80	−3	g	10200.45	−02	$x^5F_1° - e^7F_2$	8571.807	2	g	11662.95	+04	$x^5D_1° - e^5P_2$
9771.07	−3	f	10231.49	−01	$d^3F_2 - w^3D_1°$	8567.776	−1	g	11668.44	+01	$x^5D_4° - e^3D_3$
9764.37	−3	f	10238.51	+03	$w^5D_3° - f^5G_3$	8562.109	0	g	11676.16	+02	$z^3G_3° - e^5F_3$
9608.93	−3	fb	10404.14	−04	$y^7P_3° - e^7P_3$	8538.021	2	g	11709.10	−01	$x^5D_4° - e^7G_4$
9573.65	−3N	g	10442.47	00	$x^5F_2° - e^7G_3$	8527.847	0	g	11723.07	+05	$x^5D_0° - g^5D_1$
9531.226	2	fb	10488.95	−01	$x^5F_3° - e^7F_2$	8525.008	−1	f	11726.98	+05	$d^3F_3 - y^1G_4°$
9433.34	−3	g	10597.80	−05	$x^5F_4° - e^7F_4$	8519.10	−3	g	11735.11	−06	$x^5D_3° - f^5F_2$
9409.59	−3NN	f	10624.54	−05	$x^5F_4° - e^5G_5$	8509.65	−1	g	11748.15	−01	$z^5G_4° - e^5F_5$
9383.423	−2	f	10654.17	−03	$y^7P_3° - e^7P_2$	8496.483	−1	g	11766.35	+03	$z^5G_3° - e^5F_4$
9297.14	0	g	10753.05	+01	$y^3D_2° - e^3F_2$	8493.796	1	gb	11770.07	−01	$x^5D_3° - e^3D_2$
9289.44	−2	f	10761.97	−05	$x^5F_2° - f^5F_3$	8481.986	1	g	11786.46	−04	$c^3F_2 - x^3D_1°$
9248.76	−3	f	10809.30	+06	$y^7P_2° - e^7P_2$	8480.636	0	g	11788.33	−01	$x^5D_2° - e^5P_1$
9203.21	−3d?	f	10862.80	−12	$x^5F_3° - f^5F_2$	8466.510	−3	g	11808.00	+04	$c^3F_3 - x^3D_3°$
9173.21	−3	g	10898.43	+10	$b^3D_2 - z^3D_1°$	8466.102	−3	g	11808.57	00	$x^5D_2° - e^3D_1$
9156.26	0	g	10918.50	−04	$b^3G_3 - z^5G_4°$	8465.173	−2	g	11809.86	+07	$x^5D_1° - g^5D_1$
9140.12	−3	f	10937.78	+04	$a^3D_3 - y^3F_3°$	8461.472	−3	f	11815.03	−09	$z^5P_3° - X_3$
9116.940	2N	fb	10965.58	−06	$x^5D_1° - e^5G_2$	8458.99	−3N	g	11818.50	+04	$x^5D_2° - g^5D_2$
9112.19	−3	g	10971.30	+07	$x^5F_5° - e^7G_5$	8447.678	−3	g	11834.32	−07	$a^5F_3 - z^7D_4°$
9038.79	−3	g	11060.39	+06	$b^3G_5 - z^5G_6°$	8447.34	−3	f	11834.80	+10	$x^5D_4° - e^7G_3$
9024.70	−2	g	11077.66	+09	$x^5F_5° - e^7G_4$	8434.509	0d?	g	11852.80	+01	$x^5D_1° - g^5D_0$
8994.66	−3d	f	11114.67	−03	$a^3D_1 - y^3F_2°$	8425.889	−3	g	11864.93	+01	$a^5F_1 - z^7D_1°$
*8978.16	−3	{g} {g}	11135.08	{−15 {+01	$x^5D_1° - e^7G_2$ $a^1P_1 - y^3D_2°$	8414.084	0	gb	11881.57	−01	$z^3G_3° - e^5F_4$
8967.59	−3	g	11148.21	−06	$y^7P_4° - e^7S_3$	8401.695	−2	g	11899.08	−03	$z^5G_2° - e^5F_3$
8956.30	−3	g	11162.26	−06	$x^5D_1° - e^7G_1$	8382.217	−3	g	11926.74	+02	$a^5F_2 - z^7D_2°$
						8369.858	−1?	f	11944.35	+02	$x^5D_4° - e^7S_3$

TABLE C—(*Continued*)

Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig	Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig
8358.504	2	g	11960.58	+04	$b^3G_4 - z^3G_3^\circ$	7484.308	−1	g	13357.62	−04	$x^5F_2^\circ - f^5G_2$
8356.02	−3	f	11964.14	+08	$b^1D_2 - z^3S_1^\circ$	7482.213	−1	g	13361.36	−02	$x^5F_2^\circ - e^3G_3$
8355.15	−3	g	11965.38	+01	$y^5D_4^\circ - e^5D_3$	7481.736	−3	g	13362.21	+02	$a^3G_3 - z^5G_3^\circ$
8349.02	3	gb	11974.17	+05	$a^5F_4 - z^7D_5^\circ$	7477.595	0N	f	13369.60	−14	$z^3F_4^\circ - e^5D_4$
8345.19	−3	g	11979.66	+01	$a^3G_5 - y^5F_5^\circ$	7476.87	−3	g	13370.90	+09	$c^3F_2 - w^3D_2^\circ$
8342.290	3	fb	11983.82	−12	$b^3G_5 - z^3G_4^\circ$	*7474.513	−3N	{f/f}	13375.12	{−02/+16}	$z^3F_2^\circ - e^5D_1$ / $z^3D_2^\circ - e^5D_3$
8307.603	0	fb	12033.87	+02	$a^5F_2 - z^7D_1^\circ$	7471.757	−2	g	13380.05	−02	$a^3G_4 - z^3G_5^\circ$
8303.17	−3	g	12040.29	−08	$a^3G_4 - y^5F_4^\circ$	7463.395	−1	f	13395.04	−03	$x^5F_3^\circ - e^5H_4$
8299.985	−1	g	12044.91	+04	$X_3 - v^3P_2^\circ$	7461.25	−3	f	13398.89	+05	$v^5D_4^\circ - i^5D_3$
8269.644	0	g	12089.09	+01	$d^3F_4 - v^3D_3^\circ$	7452.110	−1	g	13415.33	−06	$x^5F_3^\circ - g^5F_2$
8263.850	0	gb	12097.58	+01	$x^5D_3^\circ - e^5P_2$	7447.912	0	fb	13422.88	+16	$v^5D_3^\circ - i^5D_2$
8254.32	−3	f	12111.54	+03	$a^1G_4 - y^3F_4^\circ$	7443.25	−2	f	13431.30	+03	$x^5F_3^\circ - f^3D_1$
8204.95	0N	g	12184.42	−02	$a^5F_3 - z^7D_2^\circ$	7431.97	−3N	gb	13451.68	−06	$y^5P_1^\circ - c^7P_2$
8204.09	−2	g	12185.69	+01	$a^5F_4 - z^7D_4^\circ$	7420.241	−3N	f	13472.94	−08	$x^5F_2^\circ - e^5H_3$
8196.51	−2	f	12196.96	+01	$d^3F_4 - w^3F_3^\circ$	7418.330	−3	g	13476.42	−01	$c^3F_3 - x^3F_4^\circ$
8171.239	0	f	12234.69	+09	$a^1F_3 - w^3H_4^\circ$	7415.193	−1	g	13482.12	00	$x^5F_5^\circ - e^3G_5$
8146.67	−3	g	12271.58	00	$a^3D_1 - y^3D_2^\circ$	7400.851	−3	g	13508.24	+03	$b^3F_2 - y^5F_2^\circ$
8129.35	−3	g	12297.72	−05	$a^3G_3 - y^5F_2^\circ$	7398.96	−3N	g	13511.70	+05	$x^5F_5^\circ - f^5G_4$
8112.179	−2	g	12323.76	−01	$a^3G_5 - y^5F_4^\circ$	7396.526	−1	g	13516.14	−04	$x^5D_2^\circ - f^3D_3$
8108.312	−2	g	12329.64	+03	$a^3G_4 - y^5F_3^\circ$	7385.51	−3N	f	13536.30	+04	$y^3D_2^\circ - g^5D_1$
8072.162	−1	g	12384.85	−01	$a^3P_1 - z^3D_1^\circ$	7385.00	−3	f	13537.24	−07	$x^5F_3^\circ - c^3G_3$
8027.93	−1	g	12453.09	+05	$a^3D_3 - y^3D_2^\circ$	7382.614	0	g	13541.62	+04	$a^3G_5 - z^5G_4^\circ$
8016.523	−1	fb	12470.81	−01	$y^3D_2^\circ - e^5S_2$	7373.011	2	fb	13559.08	−06	$a^3P_2 - z^3D_1^\circ$
8002.56	−2	f	12492.57	−01	$d^3F_2 - w^3F_2^\circ$	7359.983	−3	f	13583.25	−06	$x^5F_5^\circ - e^3H_5$
7965.55	−1N	f	12550.61	−05	$x^5F_2^\circ - f^5P_2$	7356.76	−3	f	13589.20	+09	$y^5P_1^\circ - f^7D_2$
7964.970	3	gb	12551.53	−06	$x^5F_3^\circ - g^5F_4$	7348.51	−2N	g	13604.46	00	$c^3F_3 - w^3D_3^\circ$
7954.97	−1N	g	12567.30	−05	$b^3G_4 - y^3F_4^\circ$	7347.15	−3	g	13606.98	+02	$a^3G_3 - z^5G_2^\circ$
7941.79	1N	fb	12588.16	+08	$a^1G_4 - y^3F_3^\circ$	7344.200	0	gb	13612.44	−04	$a^3G_4 - z^5G_3^\circ$
7924.169	−2	g	12616.15	−05	$y^3D_2^\circ - e^3D_3$	7341.78	−3	f	13616.93	00	$x^5F_5^\circ - e^5H_5$
7820.81	−1	f	12782.89	−01	$b^1D_2 - 1_2^\circ$	7330.150	0	f	13638.53	+01	$y^5P_1^\circ - f^7D_1$
7813.67	−3NN	f	12794.57	−07	$x^5F_1^\circ - f^5P_1$	7325.28	−3	f	13647.60	+10	$z^3D_2^\circ - e^5D_2$
7810.815	1	g	12799.24	−01	$x^5F_4^\circ - g^5F_4$	7317.43	−1	g	13662.24	−04	$x^5D_1^\circ - f^3D_2$
7807.916	6	g	12804.00	+09	$x^5F_5^\circ - g^5F_5$	7316.739	1	g	13663.53	+06	$a^3G_5 - z^3G_5^\circ$
7802.51	1	g	12812.86	−04	$x^5F_2^\circ - g^5F_3$	7312.08	−2N	f	13672.24	−05	$x^5F_4^\circ - e^3H_5$
7766.62	−3	f	12872.10	+19	$z^3F_3^\circ - e^5D_4$	7311.265	2	g	13673.76	−02	$z^3P_1^\circ - e^5F_2$
7746.605	1	g	12905.33	−09	$x^5F_3^\circ - f^3D_3$	7300.548	−1	f	13693.83	+07	$c^3F_3 - z^3H_4^\circ$
7745.521	1	g	12907.14	−06	$x^5F_2^\circ - f^5P_1$	7295.28	−3	g	13703.73	00	$y^5P_2^\circ - e^7P_3$
7737.65	−1NN	g	12920.26	+01	$z^5G_3^\circ - e^3F_3$	7278.526	−3	f	13735.27	−09	$x^5D_2^\circ - h^5D_2$
7733.738	−2	gb	12926.81	−08	$x^5F_1^\circ - f^5G_4$	7268.566	1	f	13754.09	+03	$z^3F_4^\circ - e^5D_3$
7720.72	−1	g	12948.60	−06	$x^5F_2^\circ - h^5D_2$	7266.96	−3	f	13757.13	+07	$a^5P_3 - z^3F_4^\circ$
7719.046	3	g	12951.41	00	$x^5F_4^\circ - h^5D_3$	7261.30	−3	g	13767.85	−04	$x^5D_4^\circ - g^5F_4$
7689.04	−3	f	13001.95	+09	$x^5F_1^\circ - h^5D_1$	7261.016	1	g	13768.39	−03	$a^3G_4 - z^3G_4^\circ$
7664.18	−3	g	13044.12	−06	$y^3D_1^\circ - e^3D_1$	7225.79	−3N	g	13835.51	+05	$x^5D_2^\circ - f^3D_2$
7661.48	−3	g	13048.72	−04	$x^5F_2^\circ - f^3D_2$	7216.63	−1	g	13853.07	+09	$x^5D_1^\circ - g^5F_2$
7647.84	−2NN	g	13072.00	00	$z^5G_2^\circ - e^3F_2$	7213.847	0	g	13858.42	−01	$z^3P_1^\circ - c^6F_1$
7617.985	−2	g	13123.22	−03	$c^3F_2 - u^5D_2^\circ$	7205.536	−2	fb	13874.40	−04	$y^3D_3^\circ - g^5D_2$
7617.245	−3	g	13124.49	−10	$x^5F_3^\circ - h^5D_2$	7190.128	1	g	13904.13	−01	$c^3P_0 - y^3D_1^\circ$
7588.310	3	g	13174.54	−01	$x^5F_4^\circ - f^5G_4$	7162.34	0	g	13958.08	+06	$x^5D_0^\circ - f^3D_1$
7582.120	0	g	13185.30	+05	$x^5D_3^\circ - h^5D_4$	7160.859	−2	fb	13960.96	−02	$x^5F_4^\circ - e^3H_4$
7573.72	−3	f	13199.92	+05	$z^3F_2^\circ - e^5D_2$	7127.573	3	g	14026.16	00	$x^5D_2^\circ - g^5F_2$
7552.795	−2	g	13236.49	00	$x^5F_4^\circ - g^5F_3$	7125.33	−2N	g	14030.58	−10	$d^3F_4 - t^5D_4^\circ$
7551.108	0	g	13239.45	−01	$x^5F_2^\circ - g^5F_2$	7120.58	−3	g	14039.94	−05	$c^3F_3 - z^1G_4^\circ$
7547.904	0	g	13245.07	−03	$x^5F_1^\circ - f^5G_2$	7120.03	1	fb	14041.02	−04	$y^5P_3^\circ - f^7D_4$
7540.444	0	g	13258.17	−01	$a^3G_4 - z^5G_4^\circ$	7118.105	0	g	14044.82	+03	$x^5D_1^\circ - f^3D_1$
7537.96	−3N	f	13262.54	+01	$v^5D_3^\circ - i^5D_3$	7114.574	0	g	14051.79	−03	$a^3G_5 - z^3G_4^\circ$
7528.18	−2N	f	13279.77	−06	$x^5F_4^\circ - e^5H_5$	7109.70	−3	f	14061.42	−04	$y^5P_2^\circ - e^5G_3$
7526.67	−3N	f	13282.43	−03	$v^5D_4^\circ - i^5D_4$	7107.25	−3	f	14066.26	+09	$a^1F_3 - t^3G_3^\circ$
*7512.166	−2	{g/g}	13308.08	{−08/+01}	$a^3P_2 - z^3D_2^\circ$ / $c^3F_3 - u^5D_4^\circ$	7105.87	−3	f	14069.00	+07	$c^3F_2 - x^3G_3^\circ$
7508.60	−3N	g	13314.40	−12	$x^5D_2^\circ - h^5D_3$	7103.150	0	gb	14074.39	+01	$a^3H_5 - y^5F_5^\circ$
7506.030	1	g	13318.96	−09	$x^5F_3^\circ - f^5G_3$	7101.31	−3	f	14078.04	−04	$a^5P_2 - z^3F_3^\circ$
7501.280	−2	g	13327.39	−06	$c^3F_2 - x^3F_3^\circ$	7093.09	0	g	14094.35	+03	$y^5P_3^\circ - e^7P_2$
7495.66	−3	f	13337.39	+03	$x^5D_2^\circ - f^5P_2$	7089.71	−2N	gb	14101.07	+03	$d^3F_3 - t^5D_4^\circ$
7494.74	−3	f	13339.02	−03	$a^3F_3 - z^5D_4^\circ$	7079.27	−1N	g	14121.86	+14	$x^5D_4^\circ - f^3D_3$
7486.118	−3	g	13354.39	+02	$z^3D_3^\circ - e^5D_4$	7074.485	−3N	g	14131.41	−08	$y^3F_3^\circ - e^3D_3$

TABLE C—(*Continued*)

Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig	Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig
7072.80	−2	f	14134.78	+03	c³F₄ — z³H₅°	6601.14	−3	f	15144.72	−03	x⁵D₂° — e³P₁
7068.64	0	f	14143.10	−09	x⁵D₄° — f⁵G₄	6555.864	−3N	f	15249.31	+02	c³F₄ — v⁵F₂°
7068.07	−1	f	14144.24	−11	x⁵D₂° — f⁵G₂	6551.714	−2	fb	15258.98	−07	a⁵F₂ — z⁷F₁°
7062.79	−3	f	14154.80	00	x⁵D₂° — g⁵F₁	6524.749	−3	f	15322.03	+03	x⁵D₁° — e³P₀
7057.92	−2	f	14164.58	+08	z⁵P₂° — e⁷D₂	6494.510	1	g	15393.38	+04	y³D₃° — f⁵P₂
*7034.090	−2	{f/f}	14212.57	{−06/−02}	y⁵P₃° — e⁵G₄ / y⁵P₂° — e⁵G₂	6483.954	−1N	g	15418.44	00	a³F₄ — z⁵F₃°
7031.40	−3N	g	14218.01	+04	x⁵D₂° — f³D₁	6472.152	−3N	f	15446.55	−02	z⁵G₄° — e⁵G₅?
7031.09	−2	g	14218.63	−15	y³F₂° — e³D₂	6468.842	−3	f	15454.45	+04	y³D₂° — h⁵D₁
7028.59	−1	gb	14223.69	−01	c³P₁ — y³D₁°	6456.874	−1N	f	15483.10	−02	y³D₂° — f⁵G₃
7022.385	−1	g	14236.27	+02	y⁵F₁° — c³F₂	6419.676	−1	f	15572.81	−06	z³F₃° — e⁵F₄
6997.080	−1	f	14287.74	+10	x⁵D₂° — g⁵F₂	6396.395	−3N	f	15629.44	−01	b¹G₄ — y³G₄°
6983.52	−3N	g	14315.49	+03	d³F₄ — t⁵D₃°	6388.424	−2	f	15649.00	−02	z⁵F₄° — e⁷D₅
6979.156	−3	f	14324.44	+03	b³P₂ — y³F₃°	6385.744	0	f	15655.56	−02	y³D₃° — g⁵F₃
6970.495	1	g	14342.23	−03	c³P₂ — y³D₂°	6376.180	−3	f	15679.05	+09	z⁵G₆° — e⁵G₆
6963.01	−3N	f	14357.65	+01	c³F₂ — v⁵F₃°	6353.856	−3	f	15734.13	−04	a⁵F₄ — z⁷F₃°
6953.057	1N	fb	14378.20	−09	z⁵P₃° — e⁷D₃	6351.305	−3	f	15740.45	−04	z⁵G₅° — e⁵G₆
6942.84	−2NN	f	14399.36	−04	c³F₃ — x³G₄°	6339.982	−3	f	15768.56	−06	z⁵F₃° — e⁷D₄
6936.496	−1	f	14412.53	−04	y⁵P₂° — e⁷S₂	6315.425	−1	g	15829.88	−02	c³F₃ — v³D₂°
6932.498	−3	g	14420.84	−02	d³F₂ — t⁵D₃°	6307.885	−2N	f	15848.80	−08	b³P₃ — x³D₃°
6930.384	−3NN	f	14425.24	−08	y⁵P₃° — e⁷F₄	6293.952	−1d?	g	15883.88	−08	y³D₁° — c³P₂
6926.385	−3	f	14433.57	+03	d³F₃ — 4₃°	6290.547	−2N	g	15892.48	00	b³F₃ — y⁵P₃°
6920.168	−2	f	14446.54	−01	y⁵P₂° — f⁵F₃	6284.007	−3	f	15909.02	−01	a³D₂ — x⁵P₃°
6881.054	−3N	fb	14528.65	+02	y³F₂° — g⁵D₂	6253.847	−1	f	15985.74	−06	y³D₃° — f⁵G₃
*6879.55	−3·	g	14531.83	+08	z⁵D₂° — X₃	6251.292	−3	f	15992.28	−08	y³F₃° — h⁵D₄
6864.324	−2N	f	14564.07	−02	y⁵P₃° — e⁷F₂	6249.657	−2	f	15996.46	−03	z⁵F₄° — e⁷D₄
6860.099	−3	g	14573.04	+08	y³D₁° — f⁵P₂	6219.528	−3	f	16073.95	+01	z⁵F₂° — e⁷D₂
6859.493	−3	f	14574.32	−01	b³P₁ — y³F₂°	6209.760	−3N	f	16099.24	−08	z³D₁° — e⁵F₂
6848.87	−3	f	14596.93	−01	y⁵P₂° — f⁵F₁	6187.413	−1	g	16157.39	−01	b³P₂ — y³D₁°
6845.98	−3	fb	14603.09	−10	y⁵P₃° — e⁵G₂	6171.010	−3	f	16200.33	−01	y³D₃° — f⁵G₂
6841.642	−3	f	14612.35	−01	X₂ — w¹F₃°	6157.427	−2	f	16236.07	−03	a³D₂ — x⁵P₂°
6824.857	−3	f	14648.28	−08	x⁵D₂° — e³P₂	6148.668	−2	f	16259.19	−07	z⁵G₆° — f⁵F₅
6819.49	−3	f	14659.81	−15	c³P₂ — y³D₁°	6145.415	−2N	f	16267.80	00	z⁵F₄° — e⁷D₃
6808.769	−3N?	f	14682.90	+07	b³P₂ — y²F₂°	6139.663	−2N	g	16283.04	−03	b³F₃ — y⁵P₂°
6805.752	−3	g	14689.42	−05	d³F₂ — t⁵D₂°	6137.509	−2	f	16288.76	00	z⁵F₅° — e⁷D₄
6803.854	−3	f	14693.50	−03	y⁵P₃° — e⁷G₃	6124.084	−3	f	16324.46	−01	a¹F₃ — u³F₂°
6803.27	−3	f	14694.77	+06	y⁵P₃° — f⁵F₄	6120.257	−1	f	16334.67	−02	a⁵F₄ — z⁷P₄°
6801.849	−3	g	14697.83	+04	a³F₂ — z⁵F₁°	6114.396	−3N	f	16350.33	+04	z³D₂° — e⁵F₂
6801.202	−3	f	14699.23	+26	z⁵D₁° — X₂?	6106.865	−3	g	16370.49	−06	y³D₃° — f⁵P₁°
6794.623	−2	f	14713.47	−04	x⁵D₃° — f³F₄	6105.144	0	g	16375.11	+03	y³F₄° — g⁵F₅
6786.460	−3	g	14731.16	−11	z⁵D₃° — X₃	6098.259	0	f	16393.59	+06	y⁵P₃° — f⁵P₃
6785.88	−3N	f	14732.42	00	c³F₄ — v⁵F₅°	6097.106	−3	f	16396.70	−06	a⁵P₃ — z³P₂°
6785.764	−2	f	14732.68	−01	d³F₃ — y¹D₂°	6091.738	−2	f	16411.14	+01	y⁵P₂° — f⁵P₂
6783.28	−3	g	14738.07	−02	b³F₄ — z³G₅°	6083.708	−3N	fb	16432.80	−10	z³D₃° — c⁵F₃
6769.682	−3	f	14767.68	−05	d³F₂ — y¹D₂°	6081.843	−3	f	16437.84	+01	c³F₃ — v³G₂°
6764.19	−3	g	14779.66	−14	d³F₄ — u³G₃°	6081.723	−3·	g	16438.17	00	z⁵G₃° — g⁵D₂
6756.568	−3	fb	14796.34	−02	b¹D₂ — w³F₂°?	6065.813	−3	f	16481.28	−02	b³H₄ — z⁵H₄°
6753.470	−2	f	14803.12	−04	y⁵P₃° — e⁷S₃	6060.829	−3	f	16494.84	−06	y⁵F₄° — f⁵D₃
6746.975	−2	g	14817.37	−03	b³F₂ — z⁵G₂°	6051.037	−3N	f	16521.52	−11	b³F₄ — y³F₃°
6745.984	−1	g	14819.55	−06	c³F₄ — w⁵G₅°	6019.386	−2	f	16608.40	−08	a¹H₅ — y³G₄°
6737.28	−3	g	14838.70	+05	z⁵D₂° — X₂	6018.314	0	fb	16611.36	+07	y³F₂° — h⁵D₁
6736.546	−3	g	14840.31	+03	b¹D₂ — z¹D₂°	6016.930	−3	f	16615.18	+05	d³F₄ — y¹F₃°
6712.467	−3	f	14893.55	−06	x⁵D₂° — f³F₃	6015.264	−2	g	16619.78	−04	a⁵P₁ — y⁵F₂°
6711.282	−3	g	14896.18	−09	d³F₂ — t⁵D₁°	6012.784	−2N	fb	16626.64	−08	y⁵P₃° — g⁵F₄
*6700.919	−3	f	14919.22	−04	X₃ — w¹F₃°	6009.853	−3	fb	16634.74	−06	a³D₃ — x⁵P₂°
6696.322	0	g	14929.46	−04	y³D₁° — f⁵P₁	6007.722	−2	f	16640.64	+07	b³H₅ — z⁵H₅°
6682.24	−3	f	14960.92	−02	c³F₄ — x³G₅°	5996.510	−3	f	16671.76	−06	y⁵F₂° — e⁵G₃
6681.30	−3	f	14963.02	+08	z³G₅° — e⁷F₆	5996.230	−3	f	16672.54	−02	a³D₁ — x⁵P₁°
*6677.54	−3	{g/f}	14971.45	{−01/−12}	z⁵D₄° — X₃ / x⁵D₁° — e³P₁	5995.949	−2N	f	16673.32	−05	y⁵P₂° — g⁵F₃
6676.89	−3	g	14972.90	−07	y⁵P₃° — e³D₂	5991.575	−3	f	16685.49	00	d³F₃ — y¹F₂°
6647.856	−3	g	15038.30	+13	z⁵D₃° — X₂	5981.398	−3	f	16713.88	−06	a¹I₆ — z³I₆°
6635.702	−1	f	15065.84	−05	z³G₄° — e⁷F₅	5978.149	−2·	g	16722.96	+06	y⁵P₁° — h⁵D₁
6615.01	−3	f	15112.97	+05	z³G₃° — e⁷F₄	5976.171	−3	f	16728.50	+02	b¹D₂ — v³F₃°
6609.693	−2	g	15125.13	−02	a⁵F₂ — z⁷F₃°	5974.596	−3N	f·	16732.91	+07	y⁵D₂° — f⁵D₃
						5973.362	−3	g	16736.36	+03	y³F₂° — g⁵F₂
						5958.351	−1	g	16778.53	−03	a⁵P₃ — y⁵F₃°

TABLE C—(Continued)

Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig	Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig
5955.117	−3	f	16787.64	00	$d^3F_3 - x^1F_3^\circ$	5685.887	−2	f	17582.54	−07	$x^5D_2^\circ - i^5D_3$
5952.192	−3	g	16795.89	−02	$x^5F_2^\circ - i^5D_3$	5678.616	−2	g	17605.05	−05	$a^3P_1 - y^5P_2^\circ$
5950.142	−2	f	16801.68	−04	$y^5P_3^\circ - f^5P_2$	5678.407	−2	g	17605.70	−08	$z^3D_3^\circ - e^3F_2$
*5943.602	0	g	16820.16	−06	$a^5P_2 - y^5F_2^\circ$	5677.705	−1	f	17607.87	−08	$y^5D_4^\circ - e^5G_5$
5943.117	−3	f	16821.54	−02	$c^3F_2 - z^1F_3^\circ$	5661.988	−2	f	17656.75	−07	$z^3P_1^\circ - e^5P_1$
5942.737	−3	f	16822.61	−07	$d^3F_2 - x^1F_3^\circ$	5661.028	−2	f	17659.75	00	$d^3F_2 - t^3G_3^\circ$
5933.811	−2	f	16847.92	−02	$y^5P_1^\circ - g^5F_2$	5658.672	0	g	17667.10	+01	$y^5F_2^\circ - g^5D_1$
5931.905	−3	f	16853.33	−05	$c^5F_4 - y^3H_4^\circ$	5652.026	−3	g	17687.88	−04	$y^5D_1^\circ - f^5F_2$
5928.527	−3	f	16862.93	−09	$y^5D_1^\circ - f^5D_1$	5651.477	0	g	17689.59	−03	$z^3G_3^\circ - f^5G_4$
5901.533	−1	f	16940.07	−02	$y^5F_4^\circ - e^5G_4$	5650.287	−3	g	17693.32	+08	$y^3F_4^\circ - e^3G_3$
5893.243	−2	f	16963.89	00	$y^5D_1^\circ - f^5D_0$	5648.917	−3	f	17697.61	−06	$a^3D_3 - w^5D_3^\circ$
5892.478	−2	f	16966.10	−04	$y^5P_1^\circ - f^5G_2$	5646.690	−1	f	17704.59	+03	$z^3P_1^\circ - e^5P_2$
5891.186	1	fb	16969.82	−07	$y^3F_2^\circ - e^5H_3$	5644.352	−2	f	17711.92	00	$y^5D_3^\circ - e^5G_2$
5890.508	−1d?	gb	16971.77	−07	$x^5F_3^\circ - i^5D_3$	5643.945	−2	f	17713.20	−01	$c^3F_4 - z^1F_3^\circ$
5887.478	−2	f	16980.51	−04	$y^5P_3^\circ - f^3D_3$	5642.764	−1	f	17716.91	−04	$y^3F_3^\circ - e^3P_2$
5881.728	−2	g	16997.11	+09	$a^5P_3 - y^5F_2^\circ$	5636.004	−3	f	17738.16	−01	$y^5D_2^\circ - e^7G_2$
5881.288	1	g	16998.38	−03	$y^3F_3^\circ - f^5G_3$	5634.526	−3	fb	17742.81	+01	$x^5D_2^\circ - i^5D_2$
5879.503	0	f	17003.54	−05	$y^5P_2^\circ - f^5G_3$	5627.100	−2	g	17766.22	−07	$y^5F_5^\circ - f^5F_4$
5876.302	−1	g	17012.80	−08	$y^5F_1^\circ - f^5F_2$	5623.644	−3	f	17777.14	−01	$a^3D_1 - w^5D_2^\circ$
5867.010	−3	f	17039.74	−01	$y^5P_1^\circ - f^3D_1$	5617.152	−1	f	17797.69	−05	$y^5F_4^\circ - e^5P_3$
5861.120	0	g	17056.87	−04	$y^5F_2^\circ - f^5F_3$	5615.169	−3	g	17803.98	+04	$z^5G_4^\circ - g^5F_5$
5859.965	−3	f	17060.24	−01	$y^5D_2^\circ - f^7D_3$	5614.284	−1N	g	17806.78	+03	$x^5F_2^\circ - g^5G_2$
5858.790	0	g	17063.65	−05	$y^5F_4^\circ - f^5F_5$	5613.716	−2N	f	17808.58	−05	$x^5D_1^\circ - 4_2$
5858.284	−2	f	17065.12	−05	$a^3H_5 - y^3F_4^\circ$	5609.991	−2	f	17820.41	−06	$b^5D_2 - u^5D_1^\circ$
5849.698	0	f	17090.17	−08	$b^1G_4 - x^3F_4^\circ$	5608.982	−1	g	17823.61	00	$z^3P_2^\circ - g^5D_3$
5845.298	0	g	17103.04	−08	$x^5F_4^\circ - i^5D_4$	5607.673	0	f	17827.77	−03	$y^5D_3^\circ - e^7G_4$
5835.589	−1	f	17131.49	−03	$b^3P_2 - x^5D_3^\circ$	5602.569	−2	f	17844.01	−08	$x^5D_3^\circ - i^5D_3$
5835.434	−1	g	17131.95	−08	$x^5F_3^\circ - i^5D_2$	5595.069	−2	g	17867.93	−03	$x^5F_3^\circ - g^5G_3$
5835.114	0	g	17132.89	−04	$y^5F_3^\circ - f^5F_4$	5583.992	−1N	g	17903.38	−08	$y^5D_2^\circ - f^5F_2$
5827.886	0	f	17154.14	00	$z^5D_1^\circ - e^7D_2$	5579.357	−1	f	17918.25	−07	$y^5D_0^\circ - e^3D_1$
5826.649	−2N	g	17157.78	−04	$y^5F_2^\circ - f^5F_2$	5577.035	−1	g	17925.71	00	$x^5F_4^\circ - g^5G_4$
5815.229	(1)	g	17191.47	+01	$d^3F_4 - t^3G_4^\circ$	5570.070	−2	g	17948.13	−03	$b^3P_1 - z^5S_2^\circ$
5813.341	−3N	f	17197.06	−03	$y^5D_2^\circ - f^7D_2$	5568.709	−3	f	17952.51	−01	$c^3F_3 - v^3F_3^\circ$
5809.878	−2N	g	17207.31	+01	$y^5F_2^\circ - f^5F_1$	5568.466	−3	f	17953.30	−09	$y^5D_3^\circ - e^7G_3$
5807.995	−1	g	17212.88	−07	$y^3F_3^\circ - f^5G_2$	5568.081	−2	g	17954.53	−03	$y^5D_3^\circ - f^5F_4$
5807.804	−1	f	17213.45	−04	$z^5D_0^\circ - e^7D_1$	5566.819	−2	f	17958.61	00	$a^3D_3 - w^5D_2^\circ$
5807.253	−3	f	17215.08	−09	$b^3H_6 - z^5H_6^\circ$	*5563.700	0	{f / f}	17968.67	{−02 / −03}	$a^3P_1 - y^3F_2^\circ$ / $c^3F_3 - u^5F_4^\circ$
5796.674	−2	f	17246.50	00	$y^5D_2^\circ - f^7D_1$	5562.128	−2	f	17973.75	−03	$z^3G_3^\circ - e^5H_6$
5791.539	0	g	17261.79	−03	$d^3F_3 - t^3G_4^\circ$	5559.652	−1	f	17981.76	−05	$x^5D_2^\circ - 4_2$
5787.277	−2	f	17274.50	−01	$a^3D_3 - w^5D_4^\circ$	*5557.921	0	fb	17987.36	−07	$c^3P_0 - x^5P_1^\circ$
5787.024	−1	gb	17275.26	−11	$y^5F_1^\circ - f^5F_3$	5555.180	−3	f	17996.23	−04	$a^1D_2 - z^3S_1^\circ$
5778.814	−2	fb	17299.80	−02	$y^5P_3^\circ - f^3D_2$	5553.238	−2N	g	18002.53	−05	$y^5D_1^\circ - e^5P_1$
5762.847	0	gb	17347.73	−04	$y^5F_1^\circ - e^3D_1$	5552.854	−3	f	18003.77	00	$b^3P_2 - x^5F_3^\circ$
5761.094	−2	f	17353.01	−05	$y^5D_1^\circ - e^5G_2$	5552.702	−1	f	18004.26	−02	$x^5D_3^\circ - i^5D_2$
5760.538	−2	f	17354.69	−02	$y^5D_3^\circ - f^7D_3$	5551.781	−3N	g	18007.25	−03	$y^5D_4^\circ - f^5F_5$
5754.923	−2N	g	17371.62	−10	$a^3P_0 - y^5P_1^\circ$	5551.310	−3N	f	18008.78	−05	$a^1P_1 - x^3D_1^\circ$
5753.983	−2N	fb	17374.46	−03	$a^3H_4 - y^3F_2^\circ$	5549.661	−1	g	18014.13	00	$x^5F_3^\circ - g^5G_5$
5753.400	−2N	g	17376.22	−06	$y^5F_3^\circ - f^5F_2$	5549.534	−3	f	18014.54	+06	$z^5G_3^\circ - g^5F_4$
5749.640	−2	f	17387.58	+04	$z^3G_4^\circ - h^5D_4$	*5543.049	−2	{g / g}	18035.62	{−04 / −06}	$b^1G_4 - x^3G_5^\circ$ / $y^5D_4^\circ - e^5P_3$
5747.865	−2	f	17392.95	−05	$b^3P_2 - x^5D_2^\circ$	5541.592	−3	f	18040.36	−04	$a^3D_2 - v^5D_2^\circ$
5739.810	−2	fb	17417.36	−10	$y^5D_2^\circ - c^5G_3$	5536.599	−1	g	18056.63	−03	$b^3P_2 - z^5S_3^\circ$
5738.242	0	g	17422.12	−05	$y^5F_4^\circ - f^5F_4$	5529.791	−3	f	18078.86	+03	$b^3P_0 - x^5F_1^\circ$
5732.886	−2	f	17438.40	−07	$y^5D_4^\circ - f^5D_3$	5528.905	−1	g	18081.76	−03	$z^3G_3^\circ - f^5G_3$
5732.311	0	g	17440.14	−08	$x^5F_5^\circ - i^5D_4$	5521.303	−1	f	18106.65	−06	$z^3G_4^\circ - e^5H_5$
*5721.717	−1	{f / f}	17472.44	{−03 / −04}	$y^5F_2^\circ - c^5P_1$ / $y^5D_3^\circ - e^5G_4$	5518.546	−3	gb	18115.70	+08	$x^5F_4^\circ - g^5G_5$
5720.902	0	g	17474.92	−06	$y^3F_4^\circ - f^5G_3$	5516.306	−2	f	18123.05	−05	$y^5D_4^\circ - e^5G_3$
5715.476	−2	f	17491.51	−03	$y^5D_3^\circ - f^7D_2$	5512.414	−1	f	18135.85	−05	$z^5G_2^\circ - f^3D_3$
5714.903	−3	f	17493.27	−07	$z^5D_3^\circ - e^7D_2$	5510.243	−3	f	18142.99	−05	$c^3F_4 - u^5F_5^\circ$
5709.931	−1	f	17508.50	00	$y^5F_3^\circ - e^5P_3$	5505.734	−3	f	18157.85	+05	$z^3G_3^\circ - e^5H_4$
5707.249	−2	f	17516.73	+01	$b^3D_3 - u^5D_2^\circ$	5499.600	−1	f	18178.10	−02	$z^3G_3^\circ - g^5F_2$
5706.116	0	f	17520.21	00	$y^5F_2^\circ - e^5P_2$	5496.577	−1	f	18188.10	−04	$x^5D_4^\circ - i^5D_3$
5696.108	0	fb	17550.99	−01	$y^3F_4^\circ - c^5H_4$	5493.356	−3	f	18198.77	−08	$b^3D_2 - y^5S_1^\circ$
5691.707	−1	g	17564.56	−05	$y^5F_4^\circ - f^5F_3$	5489.872	−1	f	18210.31	−09	$z^5G_2^\circ - f^3D_2$
5690.074	−3	f	17569.60	−02	$x^5D_1^\circ - i^5D_2$						

TABLE C—(*Continued*)

Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig	Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig
5488.173	−1d?	gb	18215.95	−12	$y^3F_3^\circ - f^3F_2$	5257.648	0	fb	19014.64	00	$a^1H_5 - x^3G_5^\circ$
*5487.524	−1N	g	18218.11	00	$y^5D_2^\circ - e^5P_1$	5255.747	−2	f	19021.51	+03	$y^5F_2^\circ - f^5P_2$
5482.268	−2N	f	18235.57	−01	$b^3D_1 - y^3S_1^\circ$	5255.666	−2	g	19021.80	+06	$y^5F_4^\circ - g^5F_5$
5479.984	−2	f	18243.17	−12	$x^5F_5^\circ - 4_2$	5253.256	−3	f	19030.53	−04	$b^3D_1 - v^5F_1^\circ$
5474.098	−3	g	18262.79	−02	$x^5F_5^\circ - g^5G_4$	5253.040	−1	f	19031.31	−05	$a^3P_2 - y^5P_1^\circ$
5473.172	0	gb	18265.88	+03	$y^5D_2^\circ - e^5P_2$	5246.007	−3	fb	19056.83	−03	$a^3D_3 - x^3D_2^\circ$
5469.283	−1N	gb	18278.87	+04	$z^5G_5^\circ - g^5F_5$	5245.738	−3	f	19057.80	−08	$a^1P_1 - z^3S_1^\circ$
5469.076	−3	f	18279.56	+05	$b^1D_2 - v^3P_2^\circ$	5245.638	−3	g	19058.17	−06	$z^5G_5^\circ - e^3H_5$
5461.824	−2N	f	18303.83	−09	$z^5P_1^\circ - e^5F_2$	5240.360	−2	g	19077.36	−01	$b^3H_5 - y^3G_4^\circ$
5455.094	−3	f	18326.41	00	$a^3D_3 - v^5D_3^\circ$	5238.253	−3N	f	19085.04	00	$z^3F_2^\circ - e^5G_3$
5453.996	−2	g	18330.10	−04	$y^5D_3^\circ - e^5P_3$	5236.386	−2	g	19091.84	−01	$z^5G_5^\circ - e^3H_5$
5443.425	−2	g	18365.70	−04	$y^5D_4^\circ - f^5F_4$	5226.388	−3	f	19128.36	+10	$b^3G_5 - y^5G_5^\circ$
5438.055	−2	f	18383.83	−06	$d^3F_4 - v^3H_5^\circ$	5218.516	−3	f	19157.22	−03	$d^3F_2 - s^3G_3^\circ$
5437.209	0	g	18386.69	−07	$z^5G_5^\circ - f^5G_6$	5217.677	−3N	g	19160.30	+05	$z^3F_2^\circ - e^3D_3$
5435.184	−1	f	18393.54	−05	$z^5G_4^\circ - f^5G_3$	5213.816	−2	f	19174.49	−10	$z^3F_3^\circ - e^5G_4$
5429.858	1	f	18411.58	−10	$z^3G_3^\circ - e^5H_3$	5213.353	−2	g	19176.19	−02	$z^3G_5^\circ - e^3H_4$
5429.513	1	g	18412.75	+02	$y^5D_2^\circ - g^5D_1$	5209.896	−2	g	19188.91	00	$b^3H_6 - y^3G_5^\circ$
5429.434	−2	g	18413.02	00	$c^3F_2 - u^3G_3^\circ$	5206.821	−2	g	19200.25	−06	$y^5F_2^\circ - f^3D_3$
5428.715	−2	f	18415.46	−03	$c^3F_2 - t^3D_1^\circ?$	5197.944	0	f	19233.04	−05	$y^5F_1^\circ - f^5P_1$
5423.760	−2	f	18432.29	−08	$b^1G_4 - w^3G_5^\circ$	5196.270	−3N	f	19239.23	−11	$b^3G_5 - y^5G_4^\circ$
5422.167	−1	g	18437.70	−06	$z^5G_6^\circ - f^5G_5$	5184.199	−2	f	19284.03	−09	$z^5G_5^\circ - e^3G_4$
5421.846	−1	g	18438.79	+02	$y^3F_4^\circ - f^3F_3$	5172.219	−1	f	19328.69	−05	$b^3F_4 - x^5D_3^\circ$
5412.795	−1	f	18469.62	+01	$z^3G_4^\circ - e^5H_4$	5169.302	−1	gb	19339.60	−01	$c^3F_4 - t^3D_3^\circ$
5412.577	−2	f	18470.37	−05	$d^3F_3 - v^3H_4^\circ$	*5168.193	−2d?	f	19343.75	−02	$z^3F_3^\circ - e^7F_3$
5406.781	1	fb	18490.16	−04	$z^5G_4^\circ - f^3D_3$	5167.718	−1	f	19345.53	−05	$a^1P_1 - u^5D_2^\circ$
5406.342	−1	f	18491.67	+05	$c^3F_4 - v^3F_3^\circ$	5164.687	−2	f	19356.88	+04	$b^3F_3 - x^5D_2^\circ$
5405.360	1	f	18495.03	−03	$z^3G_5^\circ - e^5H_5$	5159.971	−2	g	19374.57	−08	$y^5F_1^\circ - f^3D_2$
5401.272	0	g	18508.99	−05	$z^5G_6^\circ - e^5H_6$	5150.196	−1	g	19411.34	−01	$a^1H_5 - w^3G_6^\circ$
5396.908	−2	f	18523.99	−03	$c^3P_2 - x^5P_2^\circ$	5146.319	−2	g	19425.97	−07	$z^5G_4^\circ - f^3F_4$
5391.793	−3	f	18541.56	−04	$a^3G_5 - x^5F_5^\circ$	5145.740	−3N	f	19428.15	−05	$b^1G_4 - 3_3^\circ$
5385.591	−1	f	18562.92	−04	$b^1G_4 - w^3G_4^\circ$	5141.542	−3	f	19444.01	+02	$b^1G_4 - w^3F_3^\circ$
5384.204	−3	f	18567.70	+07	$z^5P_2^\circ - c^5F_2$	5130.936	−3	g	19484.21	−10	$z^5G_5^\circ - e^3H_5$
5374.771	−2	f	18600.28	+03	$a^1H_5 - w^5G_5^\circ$	5127.690	−1	g	19496.54	−04	$a^5D_3 - z^7D_2^\circ$
5358.120	−1	f	18658.09	−07	$a^3D_2 - x^3D_2^\circ$	5124.617	−1	g	19508.23	−05	$b^3H_4 - z^3I_5^\circ$
5346.341	−2	f	18699.19	−01	$z^5P_3^\circ - e^5F_3$	5123.290	−2N	g	19513.29	−03	$z^5G_3^\circ - f^3F_3$
5339.428	−1	f	18723.40	−09	$z^3G_4^\circ - e^5H_3$	5120.888	−3	g	19522.44	+02	$z^5G_2^\circ - f^3F_2$
5334.339	−2	g	18741.27	−05	$y^5D_4^\circ - e^5P_3$	5119.917	−3	g	19526.14	−07	$z^3F_4^\circ - e^7F_3$
5331.197	−3	f	18752.31	+02	$z^5P_2^\circ - e^5F_1$	5114.516	−2d?	fb	19546.76	00	$d^3F_4 - u^3F_4^\circ$
5327.895	−1	f	18763.93	−14	$z^5G_3^\circ - f^5G_2$	5096.187	−2	f	19617.06	−06	$d^3F_3 - u^3F_4^\circ$
5327.266	−2	f	18766.15	−04	$b^3D_2 - v^5F_3^\circ$	*5091.726	−2	f	19634.25	00	$a^1P_1 - u^5D_1^\circ$
5319.216	−2	g	18794.55	+01	$c^3F_4 - u^3G_4^\circ$	5086.776	−2	f	19653.35	−04	$y^5D_3^\circ - f^5P_3$
5318.040	−3	fb	18798.71	00	$b^3G_3 - y^5G_3^\circ$	5085.907	−3N	f	19656.71	+10	$z^3F_3^\circ - f^5F_4$
5317.549	−1d?	g	18800.44	−07	$c^3F_2 - t^3D_3^\circ$	5085.685	−2	fb	19657.58	−02	$y^5F_6^\circ - e^5H_6$
5315.785	−2N	f	18806.68	−03	$b^3D_2 - v^5D_3^\circ$	5084.563	−2	f	19661.91	−05	$b^1G_4 - v^3G_6^\circ$
5308.690	−1	f	18831.81	+06	$y^3F_3^\circ - f^5P_3$	5082.656	−3	f	19669.29	+12	$c^3P_0 - v^5D_1^\circ$
5301.314	−2	f	18858.02	+06	$z^3G_5^\circ - e^5H_4$	5081.845	−2	fb	19672.43	+07	$z^3F_4^\circ - e^5G_4$
5300.407	−2	f	18861.24	+02	$d^3F_4 - s^3G_5^\circ$	5080.937	−3	g	19675.94	+05	$b^3H_5 - z^3I_6^\circ$
5293.041	−1	g	18887.49	−03	$z^3G_5^\circ - e^3H_5$	5075.167	−3	gb	19698.31	+01	$y^5F_5^\circ - g^5F_4$
5288.379	−3	f	18904.14	00	$b^3G_4 - y^5G_4^\circ$	5069.627	−3	f	19719.82	−13	$b^3F_3 - x^5F_4^\circ$
5285.131	0	g	18915.76	−04	$z^3G_4^\circ - f^3F_4$	5064.975	1	g	19737.95	−10	$y^5F_3^\circ - f^3D_2$
5284.618	−1	g	18917.59	−01	$c^3F_2 - t^3D_2^\circ$	5052.993	−1	g	19784.75	−08	$b^3H_5 - z^3I_5^\circ$
5284.284	−3	f	18918.79	−06	$b^3D_1 - v^5F_2^\circ$	5051.311	−2N	g	19791.34	−08	$y^5F_4^\circ - g^5F_3$
5281.165	−2	f	18929.96	+04	$d^3F_3 - s^3G_4^\circ$	5050.139	−2	f	19795.93	−03	$z^3F_4^\circ - f^5F_5$
5279.675	−2	g	18935.31	−08	$b^3H_4 - y^3G_3^\circ$	5047.125	−2	f	19807.75	+06	$d^3F_3 - u^3F_3^\circ$
*5277.312	−1	{g}{g}	18943.78	{+01}{−02}	$b^3H_5 - y^3G_5^\circ$ / $z^5G_3^\circ - e^3H_4$	*5041.325	−1	{f}{f}	19830.54	{+02}{−04}	$z^3P_0^\circ - g^5F_1$ / $a^1F_3 - r^3G_3^\circ$
5275.286	1	f	18951.06	+04	$a^1D_2 - y^3S_1^\circ$	5040.248	−2	f	19834.77	+01	$y^5F_4^\circ - e^5H_5$
5273.602	−3N	g	18957.11	+07	$z^5G_5^\circ - e^3G_5$	5027.531	−3	f	19884.95	−10	$z^3F_4^\circ - e^7F_4$
5270.067	−2	g	18969.83	−01	$b^3D_1 - v^5P_1^\circ$	5027.355	−1	f	19885.64	−05	$z^3F_2^\circ - e^5P_1$
5267.280	0	g	18979.86	00	$z^3G_4^\circ - e^5H_4$	5025.081	−1	f	19894.64	+01	$z^3P_1^\circ - g^5F_2$
5265.424	−3	g	18986.56	−01	$z^5G_5^\circ - f^5G_4$	5021.694	−2	f	19908.06	−07	$y^5D_1^\circ - f^5P_1$
5262.889	−1	f	18995.70	−01	$a^3D_3 - x^3D_3^\circ$	5021.603	0	fb	19908.42	00	$y^5F_3^\circ - e^5H_4$
5262.624	−2	g	18996.65	−05	$z^5G_6^\circ - e^3H_5$	5019.737	−1	f	19915.82	+01	$z^3F_2^\circ - g^5D_2$
5261.503	−3	f	19000.70	−03	$b^3G_5 - y^5G_6^\circ$	5019.189	−2	f	19918.00	−05	$d^3F_2 - u^3F_2^\circ$
5259.095	−3N	g	19009.40	−02	$z^3G_4^\circ - e^3H_5$	5016.484	0	g	19928.74	00	$y^5F_3^\circ - g^5F_2$

TABLE C—(*Continued*)

Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig	Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig
5015.301	−2	f	19933.44	00	$z^3F_2° - e^5P_2$	4802.525	−1	g	20816.58	+01	$y^5P_2° - i^5D_2$
5012.700	0	f	19943.78	−06	$y^5F_2° - c^5H_3$	4801.622	−2	f	20820.49	+01	$z^3P_0° - e^3P_1$
5012.160	1	g	19945.93	−02	$y^5D_2° - f^3D_3$	4800.544	−3	g	20825.17	+04	$b^3H_4 - z^1G_4°$
5011.209	−2	f	19949.72	+13	$y^5D_1° - h^5D_2$	4799.071	−3	f	20831.56	−05	$y^5F_2° - f^3F_2$
5010.331	−2	f	19953.21	−12	$b^3F_4 - x^5F_4°$	4794.365	−1	g	20852.01	−04	$a^3P_1 - x^5D_1°$
5006.695	−2	f	19967.70	+09	$b^3F_3 - x^5F_3°$	4790.752	−1	f	20867.73	−02	$a^3D_3 - x^3F_3°$
5003.881	−3	f	19978.93	−11	$b^3F_2 - x^5F_2°$	4790.570	−1	f	20868.53	−05	$y^5D_3° - f^5G_2$
4995.411	−1	f	20012.81	−02	$z^3P_1° - f^5G_2$	4782.813	−2	g	20902.37	−11	$b^3H_6 - z^3H_5°$
4992.787	−2	f	20023.32	+05	$z^3P_1° - g^5F_1$	4780.822	−1	g	20911.08	−03	$a^3D_3 - w^3D_2°$
4991.862	−1	fb	20027.03	00	$y^5F_4° - e^3G_4$	4766.879	−1	g	20972.24	−06	$z^5F_2° - e^3F_3$
4987.857	−3	fb	20043.11	−12	$z^3F_4° - g^5D_4$	4760.076	−1	g	21002.21	−02	$z^7P_2° - e^5D_1$
4987.654	−3	f	20043.95	−12	$y^5F_5° - c^3G_5$	4749.260	−3N	f	21050.05	−02	$y^5F_3° - f^3F_2$
4986.915	−1	g	20046.90	−04	$y^5F_3° - f^5G_2$	4744.644	−2	f	21070.52	−03	$a^5F_2 - z^5P_3°$
4985.992	−1	f	20050.61	−05	$y^5F_3° - e^3G_3$	4742.939	−2	f	21078.10	−02	$y^5D_2° - e^3P_2$
4979.840	−3	f	20075.38	00	$c^3P_2 - w^5D_1°$	4727.003	−2	f	21149.16	+02	$a^3D_1 - y^3S_1°$
4978.116	−2	f	20082.34	−02	$z^3D_1° - e^5P_1$	4716.838	−1	f	21194.73	+04	$a^3D_3 - 1_2°$
4972.914	−3	f	20103.34	−07	$a^3D_2 - y^3P_2°$	4701.910	0N	g	21262.02	−04	$z^5F_1° - e^3F_2$
4970.653	0	fb	20112.48	+01	$z^3D_1° - g^5D_2$	4700.441	−1	f	21268.67	−08	$a^5P_2 - y^3D_1°$
4966.286	−2	f	20130.17	+07	$z^3D_1° - e^5P_2$	4690.382	0	f	21314.28	−03	$a^5F_1 - z^5P_2°$
4957.705	−2	g	20165.01	−11	$y^5D_2° - h^5D_2$	4688.382	0	fb	21323.37	−01	$y^5D_2° - f^3F_3$
4954.298	−3	f	20178.88	00	$y^5F_5° - c^5H_5$	4687.678	−1	f	21326.57	−06	$b^3P_0 - w^5F_1°$
4945.284	−3	f	20215.66	+02	$c^3P_2 - v^5D_3°$	4687.313	0	f	21328.23	−04	$a^5F_3 - z^5P_3°$
4942.602	−2	f	20226.63	−04	$y^5F_3° - e^3H_4$	4685.036	−1	fb	21338.60	−02	$b^3P_1 - w^5F_2°$
4939.481	−3	f	20239.41	−08	$c^3F_3 - 11_3°$	4679.985	−2	f	21361.63	−09	$y^5D_1° - f^3F_2$
4933.193	0	g	20265.21	−02	$y^5D_2° - f^3D_2$	4678.422	−1	g	21368.77	−05	$z^5F_2° - e^3F_2$
4930.067	−2	f	20278.06	−10	$a^3D_2 - y^3P_1°$	4677.604	0	f	21372.50	−08	$y^5D_3° - e^3P_2$
4926.848	−2	f	20291.31	−10	$a^1I_6 - y^3H_5°$	4674.658	0	f	21385.97	−04	$a^5F_3 - z^5P_2°$
4922.162	−2	f	20310.62	+06	$z^3P_2° - g^5F_2$	4673.280	1	g	21392.28	−01	$z^5P_2° - e^5P_3$
4919.749	−2	f	20320.59	−06	$a^3D_1 - y^3P_2°$	4672.839	1	f	21394.30	−02	$a^5F_2 - z^3P_1°$
4916.678	−2	f	20333.28	−05	$z^3D_2° - e^5P_1$	4672.038	−1	f	21397.96	−08	$c^3F_3 - w^1G_4°$
4911.541	0	f	20354.54	−07	$y^5F_2° - f^3F_4$	4668.072	1	g	21416.14	00	$z^5P_1° - e^5S_2$
4908.608	−2	g	20366.70	+02	$a^3P_0 - x^5D_1°$	4665.551	−1	f	21427.72	+04	$c^3F_4 - 13_4°$
4906.775	−2	f	20374.31	+11	$y^5F_4° - g^7D_3$	4665.259	−2	f	21429.05	−10	$z^3P_2° - e^5P_1$
4893.707	−2	f	20428.72	−03	$z^3P_3° - f^5G_2$	4661.336	−1N	f	21447.09	−03	$b^3P_2 - w^5F_2°$
4893.572	−3	f	20429.29	+09	$y^5F_5° - g^7D_4$	4653.505	−1	f	21483.18	−06	$a^5F_2 - z^5P_2°$
4887.369	−1	f	20455.21	+02	$c^3F_4 - 9_4°$	4643.217	−1	g	21530.78	−10	$a^3F_4 - y^5D_3°$
4886.179	−3	g	20460.19	−02	$c^3P_0 - x^3D_1°$	4642.593	−1N	g	21533.68	−04	$z^5F_3° - e^3F_2$
4877.592	0	g	20496.21	+08	$z^7P_3° - c^5D_4$	4641.218	0	f	21540.05	−01	$b^3P_3 - w^5F_1°$
4876.204	−2	f	20502.05	−06	$a^3D_3 - y^3P_2°$	4636.678	−1	f	21561.14	−09	$a^1G_4 - z^1I_5°$
4875.741	−3	f	20503.99	−10	$d^3F_4 - t^3F_4°$	4635.630	0	g	21566.02	−04	$z^7F_3° - e^5D_4$
4874.363	0	g	20509.79	−04	$c^3P_1 - x^3D_2°$	4632.818	1	g	21579.11	+04	$z^5P_2° - f^5D_1$
4873.754	−1	g	20512.36	−05	$a^3D_2 - w^3D_2°$	4632.147	0	fb	21582.24	−02	$a^1D_2 - w^3P_2°$
4872.910	−2	f	20515.90	−01	$y^5F_4° - e^3H_4$	4631.039	0N	f	21587.39	−04	$y^5D_4° - f^3F_4$
4872.703	−3	f	20516.78	−05	$z^3P_1° - c^3P_2$	4628.687	−1	f	21598.37	+03	$z^5P_1° - e^7F_2$
4871.937	1	f	20520.00	00	$a^3D_3 - u^5D_3°$	4625.440	−1N	g	21613.53	00	$z^3F_2° - f^3D_3$
4870.049	−1	f	20527.96	+01	$z^3D_2° - g^5D_1$	4621.622	−1	f	21631.39	+02	$z^3D_1° - f^5P_2$
4869.471	0	f	20530.39	−08	$a^1D_2 - v^3D_3°$	4620.140	−1	f	21638.32	−06	$c^3P_1 - w^5P_1°?$
4868.38?	−1	g	20535.00	−01	$a^3F_3 - y^5D_4°$	4612.620	−1	g	21673.60	+10	$b^3P_3 - y^5S_2°$
4867.641	−3	f	20538.11	−01	$b^3H_5 - x^3F_4°$	4611.194	0	g	21680.30	−02	$z^7F_4° - e^5D_4$
4867.544	−1	g	20538.52	−05	$a^3F_2 - y^5D_3°$	4611.075	−1	f	21680.86	−12	$a^3D_2 - x^3P_2°$
4863.782	−3	g	20554.41	00	$z^7P_3° - e^5D_3$	4607.100	−1N	f	21699.57	−11	$a^1P_1 - v^3D_2°$
4862.553	−2	g	20559.60	−08	$y^5D_3° - f^3D_2$	4606.015	−2N	f	21704.68	−14	$b^3P_0 - t^5D_4°$
4859.306	−2	f	20573.34	00	$a^3D_2 - x^3F_2°$	4605.105	−2	f	21708.97	−03	$b^3P_0 - v^5D_1°$
*4858.264	−2	f	20577.75	+01	$y^5F_2° - f^3F_3$	4604.852	−1	g	21710.17	+02	$a^1I_6 - x^3H_6°$
4849.662	−1	g	20614.26	+04	$a^1H_5 - y^3H_6°$	4604.247	−1N	f	21713.02	−06	$b^3P_2 - v^5D_3°$
4843.370	−2	f	20641.03	+09	$a^1H_5 - v^3G_5°$	4603.352	0	f	21717.24	−03	$b^3P_1 - v^5D_2°$
4842.734	−3	f	20643.74	−11	$y^5F_4° - f^3F_4$	4598.745	0	f	21738.99	−02	$z^5P_2° - e^7F_1$
4841.675	−2	gb	20648.26	−11	$a^3D_2 - w^3D_1°$	*4598.374	−1	{f}{f}	21740.74	{−22}{−04}	$a^5F_2 - z^5P_2°$ / $z^3F_3° - h^5D_3$
4839.790	−3	g	20656.30	−08	$y^5P_2° - i^5D_3$	4597.038	−2	f	21747.06	+11	$a^5F_2 - z^5P_1°$
4838.094	−1	f	20663.54	−01	$a^3D_3 - u^5D_2°$	4595.213	−1	g	21755.70	−03	$a^1I_6 - x^3H_5°$
4837.668	−3	fb	20665.36	−06	$d^3F_3 - t^3F_3°$	4587.726	−1	f	21791.21	−04	$z^3F_2° - f^5P_1$
4822.676	−2	g	20729.60	−05	$a^3D_1 - w^3D_2°$	4585.601	−2	f	21801.30	−04	$c^3P_2 - w^5P_3°$
4816.684	−3	g	20755.39	−06	$b^3H_5 - z^3H_4°$	4583.721	−1	f	21810.24	−03	$c^3P_0 - y^3P_1°$
4815.231	−1	f	20761.65	−06	$a^1P_1 - x^3P_2°$	4579.692	−1	f	21829.43	−04	$b^3D_3 - v^3F_2°$
4813.727	−3N	f	20768.14	−02	$d^3F_2 - t^3F_2°$						

TABLE C—(Continued)

Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig	Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig
*4579.061	−1N	{f}{f}	21832.44	{+03}{−05}	a³D₁ — v⁵F₂° / z³D₂° — h⁵D₄	4382.003	−1	f	22814.22	+10	b⁵G₅ — w¹H₅
4571.448	0	g	21868.80	−03	z⁷F₂° — e⁵D₃	4375.487	−1	g	22848.20	−04	a¹H₅ — u³G₅°
4569.073	−2	g	21880.17	−07	b³H₅ — w³G₅°	4373.899	0	f	22856.50	−01	b³D₂ — t³D₂°
4568.607	−1	f	21882.40	+06	z³D₃° — f⁵P₂	4369.716	0	gb	22878.38	+09	z³F₃° — f³F₃
4555.740	−2	f	21944.20	+07	a³D₁ — v⁵F₁°	4368.644	0	fb	22883.98	+07	a³D₃ — w⁵G₅
4546.682	−1	f	21987.92	+01	z³D₁° — f⁵P₁	4367.065	−2	f	22892.26	00	z⁵G₅° — g⁵G₅
4546.479	−1	f	21988.90	−06	c³F₂ — w¹D₂°	4358.926	−1	f	22935.01	+13	z⁵D₂° — g⁵F₃
4545.547	−2	g	21993.41	−03	b³D₃ — v³F₃°	*4357.519	0Nd?	fb	22942.41	+04	z⁵D₁° — c³F₂
4544.490	−1N	f	21998.52	+05	z³F₂° — h⁵D₁	4354.267	0Nd?	fb	22959.55	+06	z⁵F₁° — e³H
4543.237	−1	f	22004.59	−09	b³D₂ — t⁵D₃°	4351.392	−1	f	22974.72	−12	z⁵F₂° — f³D₂
4538.958	−2	f	22025.34	−05	c³F₃ — w¹F₃°	4343.214	2	fb	23017.98	+06	a³D₃ — w⁵F₃
4538.604	−1N	f	22027.05	−12	z³F₂° — f⁵G₃	4341.565	−1	f	23026.72	+03	a³D₁ — w⁵F₂
4538.185	−2N	f	22029.08	+07	y⁵D₄° — f³F₃	4341.252	−1	fb	23028.38	−10	z⁵F₂° — f³D₂
4528.825	0	f	22074.61	−03	c³F₂ — w⁵P₁°?	4338.835	0d	fb	23041.21	+02	a³P₁ — x³P₂
4528.764	0	g	22074.91	−02	b³H₄ — y¹G₄°	4333.053	−1	f	23071.95	+01	b¹D₂ — t³P₁
4526.414	1	f	22086.37	−07	z³F₄° — g⁵F₄	4330.824	−1	f	23083.83	−09	c³P₂ — 1₂°
4521.670	−2N	f	22109.54	−12	a³D₁ — x³P₁°	4329.552	−1	f	23090.61	−04	a³P₁ — x³P₂
4518.589	0	fb	22124.62	−05	a⁵P₁ — y⁷P₂°	4325.960	1	f	23109.78	−05	b³H₅ — v³G₅°
4517.600	−2	g	22129.46	−01	z³D₁° — f³D₂	4323.372	0	f	23123.61	−03	a³H₄ — v³G₅°
4516.464	−2	f	22135.03	−08	z⁵P₂° — f⁵D₃	4322.703	−1N	f	23127.19	−03	b³F₂ — w⁵F₃
4516.273	1	f	22135.96	−02	z⁵P₃° — e⁷F₄	4319.456	0	f	23144.58	−01	b³F₂ — w³D₃°
4516.091	−2N	f	22136.86	−03	a³D₃ — w³G₄°	4318.801	−1	f	23148.09	+06	b³F₃ — w⁵F₄
4511.069	−1	f	22161.50	−12	z³F₃° — h⁵D₂	4315.956	−1	f	23163.35	00	a³H₅ — v³G₅°
4510.836	0	f	22162.64	−08	z⁵P₃° — e⁵G₃	4313.037	1N	gb	23179.02	+02	a⁵G₆ — v³G₆
4504.208	−2N	f	22195.26	+13	z³D₁° — h⁵D₁	4310.381	1	g	23193.30	−04	z³D₂° — e³P₂
4498.562	−1N	f	22223.11	−13	z³D₃° — h⁵D₃	4309.463	1	f	23198.24	−03	c³P₀ — v³P₁°
4494.064	0	f	22245.36	−07	z³F₂° — e³G₃	4307.058	−2d?	f	23211.20	+12	z⁵F₄° — f³D₃
4492.970	−2	f	22250.77	+06	a³D₃ — w³G₃°	4300.220	−1	f	23248.11	−07	z⁵F₄° — e³H₄
4490.236	−1	g	22264.32	+01	z⁷F₁° — c⁵D₁	4299.486	0	f	23252.08	+01	a³D₃ — z¹D₂°
4487.754	0	g	22276.63	−05	b³H₆ — z¹H₅°	4298.199	1	f	23259.04	+04	c³P₁ — v³F₂°
4487.006	−1	f	22280.35	+01	z³D₂° — h⁵D₂	4292.136	2	f	23291.89	−03	a³P₁ — x³F₂°
4485.978	0	f	22285.45	−05	z⁵P₂° — f⁵F₁	4283.414	−1	f	23339.32	−08	b³F₂ — w³F₃
4483.780	0	f	22296.37	+01	b³D₃ — u³G₄°	4281.601	−1	f	23349.20	−03	a³H₄ — v³G₅°
4481.033	−1	fb	22310.04	+02	b³D₁ — t⁵D₂°	4280.638	0	f	23354.45	−03	b⁵G₅ — w⁵G₅
4480.278	−1	fb	22313.80	−04	z⁵P₃° — e⁵G₂	4278.002	−3	f	23368.85	+04	y⁵F₃° — i³D₃
4479.971	1	g	22315.33	+01	z³F₂° — f³D₁	4277.392	0	f	23372.18	+02	b³F₂ — w³D₃°
*4479.001	−1N	{f}{f}	22320.16	{+04}{−01}	b³D₃ — u⁵P₃° / z³D₁° — g⁵F₂	4271.961	1N	fb	23401.89	−07	a³H₅ — v³G₄
*4472.544	−2	g	22352.39	−13	a³F₄ — y⁵F₃°	4271.637	0Nd?	f	23403.66	+06	a³P₂ — x³F₃°
*4463.139	−1	f	22399.49	+03	c³P₁ — u⁵D₀°	4270.331	−1	f	23410.82	−14	b³F₃ — w³F₄
4461.822	−2N	f	22406.10	−13	b³G₃ — u⁵D₃°	4269.862	2N	fb	23413.39	+04	z⁵F₃° — f³D₄
4452.618	0	f	22452.42	00	z³F₃° — g⁵F₂	4260.735	1	f	23463.15	−03	b¹D₂ — w³P₃°
4450.764	0	fb	22461.77	+02	z³F₄° — f⁵G₄	4259.309	1Nd?	fb	23471.40	+18	b⁵G₃ — w³G₄
4441.557	−1	f	22508.33	+01	z³D₃° — g⁵F₃	4256.317	−1	f	23487.90	−01	a³H₄ — z³H₄
4438.526	−1N	f	22523.70	+01	z³F₄° — g⁵F₃	4253.914	1d	fb	23501.17	+11	b¹D₂ — 8₁°
4433.394	−1	f	22549.77	−01	b³G₃ — u⁵D₂°	*4253.542	−1	f	23503.23	−13	z⁵F₃° — f³D₂
4429.207	−1	fb	22571.09	−05	z³D₂° — g⁵F₂	4250.916	1	f	23517.74	−09	c³P₁ — v³P₂°
4428.713	−1	fb	22573.61	+16	b³D₃ — u⁵P₂°	4249.352	−1	f	23526.40	−16	a³P₁ — x³P₁°
4428.551	1	f	22574.43	+09	z³F₃° — e³G₃	4248.416	1	f	23531.58	−07	a³F₂ — z¹D₂°
*4425.771	−1N	{f}{f}	22588.61	{−11}{+08}	z⁵D₂° — e³F₂ / b³D₂ — u⁵P₂°	*4247.317	2	{f}{f}	23537.67	{−03}{−12}	a³H₄ — z¹H₄° / b¹D₂ — 8₁°
4419.785	0	fb	22619.20	−02	a³D₂ — w³F₃°	4246.023	0	g	23544.84	−03	a³D₁ — w⁵P₀°
4418.576	−1d?	f	22625.39	+13	b³D₁ — u⁵P₂°	4239.958	1	fb	23578.52	−04	c³P₁ — v⁵F₁°
4414.234	−1	fb	22647.65	−01	c³P₁ — 1₂°	4239.368	2	f	23581.81	−01	b¹D₂ — s³D₂°
4414.050	−2	f	22648.59	−12	z⁵P₃° — f⁵F₂	4238.622	−1N	gb	23585.95	−07	a³H₆ — y¹I₅°
4412.424	−1N	fb	22656.94	+03	a⁵P₃ — y⁷P₃°	4237.680	1	f	23591.20	−04	b⁵G₂ — v⁵F₁°
4405.420	−1	f	22692.96	−10	z³D₂° — e³G₃	4236.645	−1	f	23596.97	+07	b¹D₂ — s³D₃°
4405.035	1	gb	22694.94	−08	a⁵D₃ — z⁷F₃°	4235.838	0	f	23601.45	−01	a³H₆ — z³H₅°
4404.105	−1	f	22699.73	−05	z³D₂° — g⁵F₁	4235.640	−1	f	23602.56	+03	b⁵F₄ — w⁵F₄°
4394.306	−2	f	22750.35	00	z³F₃° — e³H₄	4225.717	1	fb	23657.98	−07	y⁵F₂° — i³D₃
4393.701	0	f	22753.48	0	b³D₂ — u⁵P₁°	4224.634	−1	f	23664.05	−02	a⁵G₃ — x⁵G₃°
4393.039	0	f	22756.91	−06	c³P₂ — x³F₃°	4223.733	0	g	23669.10	−02	b⁵G₅ — z¹G₄°
4392.313	−1N	fb	22760.68	−01	a³D₂ — v³F₃°	4220.053	1	gb	23689.73	−05	z³D₂° — e³P₁
4391.877	0	gb	22762.94	−01	z³D₂° — f³D₁	4219.736	−1	f	23691.52	+02	z⁵P₂° — f³P₃
						4219.421	3	g	23693.28	−05	b⁵G₄ — x⁵G₃°
						4218.226	1	f	23700.00	−08	a³H₅ — z⁵H₆°

TABLE C—(Continued)

Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig
4213.422	−1	f	23727.02	+01	a^3G_4 — $x^5G_5°$
4212.043	−1N	f	23734.79	+13	$z^5F_2°$ — e^5D_3
4210.404	3	g	23744.02	−07	c^3P_1 — $x^3P_1°$
4200.789	1	gb	23798.37	−05	a^5F_2 — $y^5P_3°$
4200.104	−1	g	23802.25	−09	$z^3D_2°$ — f^3F_3
4199.379	−1	f	23806.36	−06	b^3G_5 — $w^5G_4°$
4197.362	−1	g	23817.80	+10	$z^3F_4°$ — f^3F_3
4197.102	2	gb	23819.28	−02	a^5F_2 — $z^3F_3°$
4194.491	0	f	23834.10	+03	a^3G_4 — $x^5G_4°$
4181.549	1	f	23907.87	+02	a^1D_2 — $u^3D_1°$
4181.194	0	f	23909.90	+01	b^3D_1 — $z^1P_1°$
4180.404	1	f	23914.42	+06	a^3G_4 — $x^5G_3°$
4175.914	1	g	23940.13	−11	$z^5F_3°$ — e^7G_4
4173.151	−1d?	g	23955.98	+18	$z^5F_3°$ — g^5D_4
*4172.978	1	{f}{f}	23956.97	{−04}{−06}	b^3D_3 — $9_4°$ / $y^5D_1°$ — i^5D_2
4169.096	−1	g	23979.28	−01	a^5F_1 — $z^3F_2°$
4164.265	0	fb	24007.10	−16	$z^5F_2°$ — e^7G_1
4163.358	−2	f	24012.32	−05	$y^5D_3°$ — i^5D_3
4162.910	−1	f	24014.91	+09	c^3P_2 — $v^5F_1°$
4152.085	1	f	24077.52	−07	c^3F_4 — $v^1G_4°$
4149.501	0	f	24092.51	−07	b^1G_4 — $10_5°$
4148.260	−1	f	24099.72	+03	$z^5P_2°$ — f^5P_2
4147.490	1	f	24104.20	+01	$z^5P_3°$ — f^5P_3
4147.347	2	g	24105.03	−03	$z^5F_5°$ — e^5G_4
4143.510	2	g	24127.35	−07	$z^5F_4°$ — e^3D_3
4137.984	0	f	24159.57	−06	$z^7F_5°$ — e^5F_5
4137.417	2	g	24162.88	+03	$y^5F_2°$ — g^5G_3
4134.196	0	g	24181.70	−02	b^3F_2 — $x^3D_3°$
4132.540	3	g	24191.40	00	$y^5F_3°$ — g^5G_4
*4131.959	2	{g}{g}b	24194.79	{+06}{−15}	$z^5D_2°$ — f^5D_3 / $z^5F_2°$ — f^5F_1
4131.758	1	f	24195.97	−07	$y^5D_1°$ — 4_2
4129.466	2	g	24209.40	−04	$z^5F_3°$ — f^5F_3
4125.234	−2	f	24234.24	−03	a^3H_4 — $w^5F_4°$
4121.991	−1	f	24253.30	+07	a^1D_2 — $8_1°$
4119.672	0	f	24266.95	−07	$z^7F_3°$ — e^5F_4
4115.896	−1	f	24289.22	−05	b^3D_3 — $y^1F_3°$
4112.176	−2	f	24311.19	−02	a^3G_5 — $z^3I_5°$
4112.083	−1	f	24311.74	+02	a^1D_2 — $v^3P_2°$
4108.303	−2	f	24334.11	+04	$z^5P_1°$ — f^5D_2
4108.138	1	g	24335.09	−04	$z^5D_3°$ — e^7P_4
4105.065	−1	f	24353.30	−04	$z^5F_1°$ — e^5P_1
4104.472	0	g	24356.82	−07	b^3G_4 — $w^3G_3°$
*4103.623	0N	g	24361.86	00	a^3D_3 — $z^1F_3°$
4100.916	0	fb	24377.94	−02	a^3H_4 — $w^5F_3°$
*4100.350	0	{f}{g}b	24381.31	{+03}{00}	$z^7F_4°$ — e^5F_4 / $y^5F_3°$ — g^5G_3
4099.996	0	g	24383.41	−05	$z^5F_1°$ — g^5D_2
4097.018	−1	f	24401.13	+04	$z^5F_1°$ — e^5P_2
4096.951	−1	f	24401.53	+02	a^3H_5 — $w^5F_4°$
4096.217	1	g	24405.91	−03	a^5F_3 — $z^3F_2°$
4095.646	−2	g	24409.30	−10	a^1I_6 — $y^1H_5°$
4095.274	0	f	24411.53	−04	$y^5D_2°$ — 4_2
4090.773	−1	f	24438.38	−12	b^1G_4 — $t^3G_4°$
4090.326	0N	gb	24441.05	+05	a^3F_2 — $y^5P_1°$
4087.801	−1	f	24456.15	−08	$z^5P_2°$ — f^5P_1
4084.152	−2	gb	24478.00	+08	$z^5D_4°$ — f^7D_5
4079.186	2	f	24507.80	−05	$z^5F_2°$ — e^5P_2
4074.686	2	f	24534.86	+10	b^3D_2 — $10_3°$
4067.856	−1	g	24576.06	−02	$y^5F_5°$ — g^5G_5
4067.604	0	g	24577.59	−01	a^3D_2 — $v^3F_2°$
4067.493	0	g	24578.25	−02	b^3G_5 — $w^3G_4°$
4066.006	−1	g	24587.24	+10	$z^5F_6°$ — f^5F_4
4064.054	1	gb	24599.05	+07	b^3G_5 — $z^1H_5°$
4058.469	−1	f	24632.90	−06	b^3D_3 — $11_3°$
4057.671	0	f	24637.75	−07	a^1P_1 — $t^3D_1°$?
4046.465	1	f	24705.97	−06	$y^5D_3°$ — 4_2
4046.083	2	gb	24708.31	−08	$z^5D_2°$ — f^7D_1
4045.601	2	gb	24711.25	−05	$z^5D_4°$ — e^7P_3
4044.497	1	f	24717.99	−02	$y^5D_4°$ — i^5D_3
4043.993	2	gb	24721.08	−05	$z^5D_3°$ — e^7P_2
4043.692	0	fb	24722.92	−01	a^3P_0 — $v^5D_1°$
4042.763	−1	f	24728.60	−05	$z^5D_1°$ — e^7F_1
4036.377	1	f	24767.72	−06	a^3G_3 — $w^3D_3°$
4035.986	−1	fb	24770.12	−02	b^3G_3 — $w^3F_4°$
4031.718	2	fb	24796.34	+06	b^3G_3 — $v^3D_3°$
4030.901	2	fb	24801.37	−02	b^1G_4 — $t^3G_3°$
4020.024	0	f	24868.47	+14	$z^5D_2°$ — e^7F_1
4011.901	−1	g	24918.82	−10	b^3G_5 — $y^1G_4°$
4009.549	1	f	24933.44	−04	$z^5D_4°$ — e^7F_3
4006.159	1	g	24954.53	−02	$z^5D_2°$ — e^7D_3
4005.484	1	f	24958.74	+02	b^5F_3 — $x^5G_4°$
4005.390	1	f	24959.33	−04	a^3P_1 — $y^5S_2°$
3998.475	0	f	25002.49	−10	b^3H_4 — $6_5°$
*3997.493	2	{f}{f}	25008.63	{−05}{−07}	$z^5D_3°$ — e^7F_3 / $z^5D_3°$ — e^5S_2
3996.790	1	f	25013.03	−01	$y^5D_3°$ — g^5G_4
*3996.265	1	{f}{g}	25016.32	{+09}{−04}	b^3G_4 — $v^3D_3°$ / $z^5D_0°$ — e^7G_1
3994.272	−2	f	25028.80	−02	$z^7F_2°$ — e^5F_1
3992.646	0	f	25038.99	−02	b^5F_3 — $x^5G_3°$
3990.569	0d?	fb	25052.02	−11	$z^5D_3°$ — e^7F_4
3989.611	−1N	fb	25058.04	−05	b^3H_5 — $4_4°$
3989.262	−1N	gb	25060.23	−15	$z^5D_1°$ — e^7G_2
3986.298	0	g	25078.86	−01	$z^5D_3°$ — e^5G_3
3985.322	1	f	25085.01	−03	b^3F_4 — $x^5G_5°$
3984.943	1	f	25087.39	−08	$z^5D_1°$ — e^7G_1
3984.451	−1	f	25090.49	+03	b^5F_3 — $x^5G_3°$
3983.818	0	g	25094.48	+10	b^3G_3 — $w^3F_2°$
3979.117	−1	g	25124.12	+02	b^3G_4 — $w^3F_3°$
3974.636	2	fb	25152.45	+08	a^1G_4 — $y^3H_4°$
3971.010	1N	f	25175.42	−12	$y^5D_4°$ — g^5G_5
3965.844	−1	f	25208.20	−10	a^3P_1 — $v^5D_1°$
3962.651	−1	f	25228.52	+03	b^3D_3 — $t^3G_3°$
3962.400	0	g	25230.12	+13	$z^5D_3°$ — e^5G_2
3959.454	−1	f	25248.89	+02	$z^5D_4°$ — e^7F_3
3955.768	0	f	25272.42	+03	b^3F_4 — $x^5G_3°$
3955.221	1	g	25275.91	−01	a^1G_4 — $v^5G_3°$
3950.801	−2	g	25304.19	−10	$z^7D_3°$ — e^5D_3
3949.235	1	g	25314.22	−01	$z^7D_1°$ — e^5D_2
3948.476	−1N	g	25319.09	+03	$z^5D_4°$ — e^5G_3
3948.284	1	g	25320.32	−02	$z^5D_3°$ — e^7G_3
3947.980	−2	f	25322.27	+14	a^3D_2 — $u^5F_1°$
3936.772	0d?	gb	25394.36	+10	$z^5D_4°$ — e^3D_3
3927.610	0	f	25453.60	00	a^3G_4 — $z^1G_4°$
3925.540	1	f	25467.02	+07	a^3D_3 — $u^5P_3°$
3923.043	1	g	25483.23	−07	a^3D_3 — $y^1D_2°$
*3922.086	1	{g}{g}	25489.44	{00}{−07}	$z^7D_0°$ — e^3D_1 / $z^7D_1°$ — e^3D_1
3918.575	0	fb	25512.28	+02	b^3P_2 — $v^5F_1°$
3914.428	1	f	25539.31	−06	a^3D_1 — $u^6P_1°$
3910.536	2	g	25564.72	−14	$z^5D_3°$ — f^5F_2
3908.687	−1	g	25576.82	−02	$z^7D_3°$ — e^5D_2
3906.965	1	gb	25588.09	+03	$z^5D_1°$ — e^5P_2
3905.681	2N	gb	25596.50	−14	$z^7D_2°$ — e^5D_1
3905.191	1	g	25599.72	−05	$z^5D_3°$ — e^3D_2
3905.011	1	f	25600.90	−03	$z^5F_2°$ — f^5P_3
3889.360	1d?	fb	25703.91	+ 1	a^3D_1 — $u^5P_1°$
3885.935	0	gb	25726.57	−05	b^1G_4 — $x^1H_5°$

TABLE C—(Continued)

Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig	Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig
3885.758	1	g	25727.74	00	$z^5D_2°$ — e^5P_2	3683.757	−3	f	27138.50	+07	$z^3D_2°$ — g^5G_2
3878.196	1	g	25777.91	−03	$z^5D_1°$ — g^5D_0	*3682.174	2	{g g}	27150.17	{−04 −21}	$z^7P_3°$ — e^7F_2 / $z^7P_4°$ — f^7D_3
3867.442	0	g	25849.58	+02	b^3F_2 — $u^5D_2°$	3675.767	0	f	27197.49	−05	$z^3D_3°$ — g^5G_4
*3864.307	3	{g g}b	25870.55	{+04 −03}	b^3F_3 — $u^5D_3°$ / $z^5D_4°$ — g^5D_3	3675.450	−1	g	27199.84	−04	b^3F_2 — $v^5F_2°$
3863.703	1	g	25874.60	−02	$z^5D_2°$ — g^5D_1	3673.684	−1	f	27212.91	00	$z^5F_4°$ — g^5G_4
3860.730	−2	f	25894.52	+08	$z^5F_4°$ — g^5F_5	3670.221	−3	f	27238.59	+04	a^3F_2 — $y^7P_3°$
3858.474	0	gb	25909.69	+06	$z^5D_3°$ — g^5D_2	3666.850	−2	f	27263.63	−02	$z^7P_2°$ — g^5D_3
3848.299	2	g	25978.17	−05	b^3F_2 — $w^3D_3°$	3666.285	2	f	27267.83	+02	a^3D_2 — $10_3°$
3846.290	1	fb	25991.74	−02	b^1G_4 — $w^1F_3°$	3662.738	−2	f	27294.24	−03	c^3P_2 — $t^5D_2°$
3845.224	1	fb	25998.94	−07	$z^5F_3°$ — g^5F_4	3660.412	1	fb	27311.58	−02	b^3F_2 — $v^5F_1°$
3843.717	2N	fb	26009.13	+01	$z^5F_2°$ — f^5P_2	3658.025	1	g	27329.40	−02	b^3G_3 — $u^3G_4°$
3842.905	1	g	26014.63	−06	b^3F_3 — $x^3F_4°$	3656.358	1	g	27341.86	−07	$z^7F_2°$ — f^5D_3
3840.203	0	g	26032.93	−03	a^3P_2 — $w^5D_1°$	3655.356	1	g	27349.32	−08	a^3P_1 — $y^3P_1°$
3834.476	0	g	26071.81	−12	a^3D_3 — $u^3D_2°$	*3653.353	1	{g f}	27364.35	{−03 −02}	b^3F_3 — $v^5F_2°$ / $z^7F_3°$ — e^7P_4
3826.627	1N	fb	26125.29	+04	a^3H_4 — $x^5G_3°$	3652.261	−1	g	27372.53	00	c^3P_2 — $y^1D_2°$
3824.752	−1	f	26138.10	−13	b^3F_2 — $u^5D_1°$	3651.040	−1	f	27381.68	−05	$z^5D_4°$ — f^5G_5
3819.496	2	f	26174.06	+04	$z^5F_3°$ — f^5P_2	3649.699	−1	f	27391.74	−03	$z^7P_4°$ — f^5F_5
3816.924	1	g	26191.73	−01	$z^7P_2°$ — f^5D_2	3647.563	0	f	27407.78	−06	$z^5D_2°$ — f^3D_3
3813.930	1	f	26212.26	+06	a^3H_5 — $x^5G_4°$	3646.098	−1	f	27418.80	00	$z^7F_2°$ — e^7P_3
3811.809	2	fb	26226.85	−03	$z^5F_4°$ — g^5F_4	3641.460	1	fb	27453.72	−10	$z^7F_1°$ — f^5D_2
3810.902	0	gb	26233.09	+02	b^3F_2 — $w^3D_1°$	3638.169	1	f	27478.55	−08	$z^7F_4°$ — e^7P_4
3803.260	1	f	26285.80	−11	a^3P_2 — $v^5D_2°$	3637.059	1	g	27486.93	−07	b^3G_3 — $u^3G_3°$
3789.824	1	g	26378.98	−06	$z^5F_4°$ — h^5D_3	*3636.486	1	{f g}	27491.27	{+14 +02}	a^3F_3 — $y^7P_2°$ / $z^5D_2°$ — g^5F_3
3785.792	1	f	26407.08	−09	$z^5F_5°$ — f^5G_5	3635.829	−1	g	27496.23	−07	$z^7F_5°$ — e^7F_6
3784.254	0	fb	26417.81	+12	b^3H_5 — $w^3H_4°$	3634.536	−2	g	27506.02	−14	$z^7F_2°$ — f^5D_2
3771.499	1	g	26507.15	+02	b^3H_6 — $w^3H_5°$	3633.653	−2	f	27512.70	−08	$z^7P_2°$ — e^5P_1
3764.223	1	g	26558.39	−07	a^5P_2 — $w^5F_2°$	3628.829	2	gb	27549.27	−10	b^3G_4 — $u^3G_4°$
3763.573	1	g	26562.97	−05	a^3P_0 — $z^5S_1°$	3627.360	−2N	f	27560.43	−09	$z^7P_2°$ — e^5P_2
3761.069	1	f	26580.66	−05	$z^5F_4°$ — f^3D_3	3624.065	2	g	27585.49	−06	$z^5D_2°$ — f^5P_1
3758.131	−1	f	26601.44	−14	$z^5F_2°$ — f^5G_3	3623.511	−1	f	27589.70	00	$z^7P_3°$ — g^5D_3
3754.876	−1N	f	26624.50	+13	b^1G_4 — $u^3H_4°$	3621.202	2	fb	27607.30	−05	$z^5D_3°$ — f^3D_3
3751.092	1	gb	26651.36	−04	a^5P_2 — $w^5F_1°$	*3620.881	1	{f g}	27609.74	{−02 −08}	$z^7F_0°$ — f^5D_1 / b^3H_4 — $t^3G_4°$
3748.907	0	fb	26666.89	+03	a^3G_5 — $z^1H_5°$	3619.671	−1	g	27618.97	−06	a^3P_1 — $u^5D_0°$
3747.006	2	gb	26680.42	−02	$z^7P_3°$ — e^7P_2	3618.924	0	g	27624.68	−08	a^3P_1 — $u^5D_1°$
3742.569	2	gb	26712.05	−08	$z^7P_2°$ — e^5G_3	3618.616	1N	g	27627.03	+02	$z^5D_2°$ — h^5D_2
3742.148	1	f	26715.06	−02	$z^3F_3°$ — g^5G_4	3618.305	3	fb	27629.40	−04	$z^7F_4°$ — e^7P_4
3735.702	0Nd?	fb	26761.15	+03	a^3P_1 — $w^5P_2°$	3617.961	2N	fb	27632.03	+08	a^3H_4 — $w^5G_5°$
3733.197	1	g	26779.10	+01	b^3F_4 — $w^5G_5°$	3615.005	−3	g	27654.62	00	$z^7D_6°$ — e^5F_5
3731.161	−1	f	26793.72	−08	b^1G_4 — $u^3F_4°$	3613.953	−3	fb	27662.68	−01	b^3H_5 — $12_6°$
3729.341	0	f	26806.79	00	a^1G_4 — $u^5F_4°$	3613.450	2	f	27666.52	+01	a^3D_3 — $10_3°$
3727.687	1	gb	26818.69	−08	b^3F_3 — $w^5G_3°$	3613.110	2	fb	27669.13	−21	$z^7F_2°$ — f^7D_3
3727.533	1	f	26819.80	−04	$z^5F_2°$ — e^3G_3	3612.520	−2	f	27673.64	−08	b^3H_4 — $13_4°$
3727.028	0	fb	26823.43	−02	a^3D_1 — $z^1P_1°$	3609.473	2	fb	27697.00	−10	$z^7F_2°$ — f^7D_4
3726.067	−1	f	26830.35	−02	b^3G_5 — $x^1G_4°$	3606.539	2	g	27719.54	−06	a^3P_1 — $w^3D_1°$
3722.760	0	fb	26854.18	+04	$z^5F_2°$ — g^7D_3	3606.379	0	g	27720.76	−02	b^3F_4 — $w^3G_4°$
*3722.238	1	{f f}	26857.95	{00 −06}	a^3P_1 — $w^5P_1°$ / c^3P_1 — $t^5D_2°$	3602.709	−2	f	27749.00	−06	$z^7P_4°$ — e^7G_3
3717.837	0	f	26889.74	+01	$z^5F_2°$ — f^3D_1	3601.429	−2	f	27758.87	−05	a^3P_2 — $w^5P_3°$
3717.188	−1	f	26894.43	−03	$z^5F_5°$ — f^5G_4	3597.253	−3d?	f	27791.09	−13	a^1I_6 — $x^3I_5°$
3709.032	1	g	26953.57	−03	$z^7P_2°$ — e^7G_3	3594.105	−2	g	27815.43	−08	$z^7D_4°$ — e^5F_4
3708.189	−2	g	26959.70	−04	b^3F_3 — $x^3G_3°$	3593.795	−2	f	27817.83	+01	a^3H_4 — $v^5F_5°$
*3705.710	2	fb	26977.73	+03	a^3G_3 — $3_3°$	3588.535	3	g	27858.61	−08	$z^7P_4°$ — e^7S_3
3705.264	−1N	f	26980.98	−04	$z^5F_3°$ — f^7G_3	3588.247	0	f	27860.84	−10	a^3F_3 — $y^7P_4°$
3704.798	−2	f	26984.38	+01	b^1G_4 — $u^3F_3°$	3582.332	2	f	27906.84	+07	$z^5D_1°$ — g^5F_1
3703.449	−2	f	26994.20	−14	$z^5F_4°$ — f^5G_3	3579.836	2	f	27926.30	−08	$z^5D_3°$ — e^3G_4
3700.601	1	g	27014.98	+04	$z^5D_3°$ — h^5D_4	3572.322	−3	f	27985.04	−02	a^3H_5 — $v^5F_5°$
3699.397	−2	f	27023.77	+06	$z^3D_2°$ — g^5G_3	3570.598	−3	g	27998.55	+05	$z^7D_5°$ — e^5F_3
3698.018	1N	gb	27033.85	+08	a^5P_2 — $v^5D_1°$	3566.316	0N	f	28032.16	−06	a^3P_2 — $w^5P_1°$
*3693.784	0	{g f}	27064.83	{−05 +02}	a^3F_3 — $x^5D_4°$ / c^3P_1 — $t^5D_1°$	3565.839	0	f	28035.91	−10	$z^5D_2°$ — f^5G_2
3691.536	−3	f	27081.32	−06	$z^5F_1°$ — g^7D_1	3564.566	2	g	28045.93	−05	a^3H_4 — $x^3G_5°$
3691.177	−2N	g	27083.95	00	b^3F_3 — $v^5F_3°$	3564.525	3	g	28046.25	−09	a^3H_4 — $x^3G_5°$
3689.375	3	fb	27097.18	−04	$z^7P_2°$ — f^5F_3	3563.612	−1	g	28053.43	−05	$z^7F_6°$ — e^5G_5
3685.663	−3	f	27124.47	00	b^3F_2 — $v^5P_2°$						

TABLE C—(Continued)

Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig	Solar λ	Solar Int	Grade	Wave Number Solar	o−c	Desig
3562.608	−3	f	28061.34	−09	b³F₄ — y¹G₄°	3308.761	2	gb	30214.13	−12	a³H₆ — y³H₅°
3560.077	−1	gb	28081.29	−08	z⁷F₃° — e⁷F₄	3305.751	0	fb	30241.63	−04	b²H₅ — u³F₄°
3559.465	1	g	28086.12	−12	z⁷F₁° — e⁷F₂	3304.366	0	g	30254.32	−05	z⁵F₂° — i⁵D₃
3558.211	−2	g	28096.01	−05	b³F₂ — v³D₃°	3291.431	−1	f	30373.20	+10	b¹G₄ — r³G₄°
3554.649	1	g	28124.17	+01	z⁷D₂° — e⁵F₂	3274.227	1	g	30532.79	+08	a⁵P₁ — x³P₀°
3554.453	2	fb	28125.72	−09	z⁷P₄° — e⁵P₃	3272.607	1	g	30547.91	−08	a³F₃ — z⁵H₄°
3551.113	1	g	28152.17	−01	z⁷F₄° — e⁷F₃	3270.672	0	fb	30565.98	+18	b¹G₄ — r³G₃°
3544.860	−3	g	28201.83	+15	z⁷D₁° — e⁵F₁	3269.433	0	g	30577.56	−13	a⁵P₂ — x³P₂°
3543.102	−3	fb	28215.82	−08	a³H₆ — v⁵F₅°	3265.557	2	gb	30613.85	−06	a³G₄ — w³H₅°
3542.572	−1	g	28220.04	−10	z⁷F₃° — e⁷F₂	3263.467	−3	f	30633.46	−16	a³D₃ — u³F₂°
3541.243	−1N	fb	28230.63	−23	a³F₄ — y⁷P₃°	3258.632	1N	g	30678.91	−11	z⁷D₁° — f⁵D₂
3528.242	0	f	28334.66	−03	a³H₄ — v⁵F₃°	*3256.497	1N	f	30699.02	+23	z⁷D₂° — e⁷P₃
3527.901	0	f	28337.40	−03	a³G₃ — z¹F₃°	3254.471	2	g	30718.13	−15	z⁷D₃° — e⁷P₄
3526.975	0	f	28344.83	−11	z⁵P₂° — i⁵D₃	3240.122	−1	g	30854.16	−10	z⁷D₃° — e⁷P₃
3523.185	0	f	28375.33	+01	a³D₃ — t³G₃°	3238.319	−1	g	30871.34	−03	a¹G₄ — v³H₄°
3522.738	−2	f	28378.92	−07	a¹G₄ — s³D₃°	3235.328	0	f	30899.88	−01	a³G₄ — y³I₅°
3515.410	0	f	28438.08	00	b³F₂ — z¹D₂°	3230.098	0	g	30949.91	−09	a⁵F₃ — y³D₂°
3514.469	0	f	28445.69	+06	a³F₄ — y⁷P₄°	3227.177	−3	f	30977.92	−08	b³F₄ — u⁵F₃°
3513.605	−2	gb.	28452.69	−12	z⁷F₆° — f⁵F₅	3223.100	−2	f	31017.10	−23	a³D₂ — t³F₃°
3512.812	−1	f	28459.11	−10	z⁷F₃° — e⁷S₃	3219.370	−2N	g	31053.04	+03	a³G₅ — w³H₄°
3512.731	−1	f	28459.77	+04	b³H₅ — w¹G₄°	3216.050	−2	f	31085.10	+07	a³D₂ — t³F₃°
3510.193	1	fb	28480.35	−07	z⁵P₁° — 4₂	3202.668	0	f	31214.98	−09	a³F₂ — w⁵D₂°
3509.732	1	g	28484.09	−05	z⁷F₀° — f⁵F₁	3193.735	−1N	fb	31302.29	+02	a³D₁ — t³F₂°
3507.146	2	f	28505.09	−04	z⁵P₂° — i⁵D₂	3191.415	0	fb	31325.03	−03	a³D₃ — t³F₄°
3506.595	1	f	28509.57	−12	z⁷F₁° — f⁵F₁	3187.169	0	f	31366.76	−11	z⁷F₁° — g⁷D₂
3502.470	−1	f	28543.14	−06	z⁵D₃° — f⁵F₄	3183.582	0	gb	31402.11	−04	a³H₅ — x³H₆°
3498.184	1N	gb	28578.11	−06	z⁷F₆° — c⁷G₅	3174.222	0	g	31494.70	−07	z⁵D₁° — i⁵D₂
3494.263	−3	f	28610.19	−10	a³H₅ — w³G₅°	3172.298	0	f	31513.80	−02	a³G₃ — x¹F₃°
3493.583	−1	g	28615.75	−08	z⁷F₅° — f⁵F₄	3169.076	−2	f	31545.84	+12	a¹H₅ — t³H₆°
3490.490	0	f	28641.10	−15	z⁵P₃° — i⁵D₄	3166.596	0	f	31570.54	−10	a⁵P₂ — v³D₁°
3477.986	−2	f	28744.07	−07	z⁵P₂° — 4₂	3166.256	1	gb	31573.94	−11	z⁷D₃° — e⁷F₃
3473.228	−3	fb	28783.45	+06	z⁵D₄° — f⁵F₄	3165.158	1	fb	31584.89	+02	a⁵P₃ — v³D₃°
3473.011	−2	f	28785.25	−02	z⁵D₂° — f⁵F₃	3165.085	−2	g	31585.62	−06	a³H₄ — u⁵G₆°
3459.281	−2	fb	28899.49	+04	z⁵D₁° — f⁵F₂	3161.554	−1	f	31620.89	−01	a³H₄ — 4₄°
3450.141	−1	g	28976.05	−04	b³F₃ — v³G₃°	3160.924	0	g	31627.19	−07	z⁷D₂° — e⁷G₂
3449.052	−3	·f	28985.20	+07	b³G₅ — w³H₄°	3159.262	0	gb	31643.83	−08	b³F₂ — t³D₂°
3448.206	0Nd?	fb	28992.31	−12	a³H₆ — z¹H₅°	3157.144	1	gb	31665.06	+03	a³P₂ — w³P₁°
3440.740	−1N	f	29055.22	+03	a³G₃ — v³F₄°	3155.796	0	gb	31678.58	+01	a³H₅ — x³H₆°
3438.101	−2	f	29077.52	+01	a³G₄ — t⁵D₄°	3154.121	−1	fb	31695.41	−15	a⁵F₂ — v⁵D₂°
3434.967	−1	f	29104.04	−11	a¹D₂ — t³F₂°	3149.498	−1	fb	31741.93	00	b³G₅ — x¹H₅°
3430.886	−2	gb	29138.67	−05	b³H₅ — v³H₆°	3144.926	0	f	31788.08	−06	a³H₅ — 4₄°
*3429.818	−2	{ f / f }	29147.74	{ −11 / −01 }	b³F₂ — w³P₂° / a¹G₄ — y¹H₅°	3139.107	−2	f	31847.00	−11	z⁷D₃° — f⁵F₃
3428.021	0	f	29163.02	−06	b³H₄ — w¹F₃°	3138.407	−2	f	31854.10	−08	a³F₃ — v⁵D₄°
3426.674	2	f	29174.48	−01	b³H₅ — x¹H₅°	3136.086	−2	g.	31877.67	−04	z⁷D₅° — e⁷G₆
3426.093	−2	f	29179.43	−06	c⁵P₀ — t⁵P₁°	3133.967	−1d?	fb	31899.23	−02	z⁷D₄° — f⁵F₄
3411.878	−2	f	29301.00	+05	a³G₅ — u⁵F₅°	3125.054	2	fb	31990.21	−28	a³F₃ — v⁵D₃°
3410.565	−1	f	29312.28	−07	b³F₃ — w³P₂°	3119.036	−1	f	32051.92	+02	a³G₃ — 13₄°
3409.399	−2N	fb	29322.30	−03	b³G₃ — y¹F₃°	3113.667	0	f	32107.19	−01	z⁷D₂° — e⁵P₁
3407.562	3	gb	29338.11	−26	a⁵P₃ — u⁵D₂°	3102.644	0	g	32221.26	−06	a⁵F₃ — y⁷P₃°
3406.172	−1	g	29350.08	−02	b³P₁ — u³D₂°	3097.491	−1	f	32274.86	+04	z⁷D₄° — e⁵P₃
3398.111	−3N	f	29419.70	+07	b³H₆ — x¹H₅°	3094.069	−3	f	32310.55	+14	z⁷D₃° — c⁵P₂
3391.842	0	f	29474.08.	−04	a³D₂ — s³G₃°	3081.841	0	f	32438.75	−12	a³F₄ — v⁵D₄°
3369.152	0	gb	29672.56	−08	a³H₄ — v³G₅°	3079.826	−2	f	32459.96	+11	a⁵P₂ — w³P₄°
3368.248	−2	f	29680.53	00	a³D₃ — s³G₄°	3057.802	1N	g	32693.75	−07	a⁵F₃ — y⁷P₄°
3344.084	−2N	f	29894.99	+06	b³G₄ — 12₅°	3035.238	0	f	32936.78	+08	c³P₁ — t⁵F₂°
3342.761	−1	g	29906.82	+01	z⁷P₂° — g⁷D₃	3018.258	−1	f	33122.08	−06	b³F₄ — x¹F₃°
3336.549	−1	f	29962.50	−06	b³G₃ — 13₄°	*2990.336	0	{ f / f }	33431.35	{ −02 / +11 }	z⁷F₄° — 1 / b³G₄ — t³F₄°
3315.176	0	f	30155.66	−03	b³H₁ — u³F₂°	2980.586	−1	f	33540.69	+10	a³H₄ — 9₄°

* Fe I blend.   Designations listed only if grade is "good" or "fair."
b (Column three) Solar line not entirely due to Fe I.

AN ANALYSIS OF THE ZEEMAN PATTERNS OF THE SPECTRUM OF Fe I

DOROTHY W. WEEKS

(27) OUTLINE OF THE WORK

This analysis of the Zeeman patterns of the spectrum of Fe I is based upon photographs taken at the Massachusetts Institute of Technology with the assistance of Works Progress Administration workers under the supervision of Dean George R. Harrison, who generously placed them at the disposal of the author. To obtain the Zeeman effect, the Bitter [33] electromagnet was used, with field strengths ranging from 83,000 to 87,000 oersteds for 5 sets of spectrograms containing approximately 12 plates each. The technique used in taking these spectrograms is described in papers dealing with other elements [34] that have been analyzed at the Massachusetts Institute of Technology. The plates were measured upon Harrison's automatic measuring machine,[35] which recorded on a film the wave-lengths and relative photographic intensities of the components. From the film-records thus produced the Zeeman patterns were studied according to the method developed by Russell.[36] These permanent film-records are noted for the high degree of accuracy of the measurements [35] and provide a convenient means for reexamination of the patterns.

The strong magnetic field resulted in a large number of resolved patterns with their components well separated. The magnification of these separations afforded by the automatic comparator made the identification of unblended patterns a comparatively easy task, but the spectrum is so rich that loss by overlapping of neighboring patterns was serious. Many lines originally measured were rejected for underexposure, and a few for overexposure, so that, of some 1250 originally recorded from the films, between λ6494 and λ2272, 1038 were adopted as a basis for the final study. Of this number, 519 were resolved completely enough to permit the determination of both the g-values involved, from the observed pattern alone; for 163 others, the pattern, though resolved, was so much blended that this was impracticable, though the difference $g_1 - g_2$ could be found from the separation of the components. There were also 345 lines with unresolved patterns, sufficiently clear of blends to permit the determination of one g-value when the other was known—as can also be done for

the preceding group. The remaining 11 lines are of the "unaffected" type for which both g-values are very nearly zero. From these data, g-values were derived for 130 of the 184 known even levels, and 242 of the 280 odd levels. There are also 8 even and 12 odd levels for which $J = 0$, and g is effectively zero, though theoretically indeterminate—raising the whole number of available determinations to 392 levels out of 464. These values were computed by the usual process—starting with the values determined from fully resolved patterns, and using the mean g's so obtained for the even terms to obtain additional values for the odd terms from the unresolved or partially obscured patterns. A second approximation (as usual) was found to give stable values.

There were about 90 blended patterns for which only an unresolved maximum on one side of the mean position could be observed. These could be utilized by assuming that the correction to the wave-length recorded by the automatic machine was the same as for neighboring lines. These corrections are almost always small, but they vary from one well-observed line to another (perhaps because of Paschen-Back effect); enough to introduce quite sensible errors into work of this refinement. Such patterns were therefore rejected, except when they gave the only determination of g for the level involved—in which case the result is given to two instead of three decimals and marked with a colon. Almost all of these rejected observations were fully consistent with the pattern resulting from the g-values found from better data. Five lines, however, show patterns inconsistent with them and are evidently accidental blends.

(28) OBSERVED ZEEMAN PATTERNS OF FE I

Table D (pp. 184–202) contains the observed Zeeman patterns for the 1038 lines and the g-values deduced from each. Column 2 gives the number of different π-components observed (those equidistant from the middle being counted but once, no matter whether one or both were measured). Columns 3, 4, and 5 give the positions, in units of 0.001a, of the strongest of these (indicated by heavy type), and two adjacent ones. Others are omitted to save space. The letters B and D represent unresolved patterns, respectively, strongest at the outer edges and at the center.[37] The readings of the films correspond very

[33] G. R. Harrison and F. Bitter, *Phys. Rev.* 57: 15, 1940.

[34] G. R. Harrison and J. Rand McNally, Jr., *Phys. Rev.* 58: 703, 1940.

[35] G. R. Harrison, *Jour. Opt. Soc. Amer.* 25: 169, 1935.

[36] H. N. Russell, W. Albertson, and D. N. Davis, *Phys. Rev.* 60: 641, 1941.

[37] W. F. Meggers and H. N. Russell, *Bur. Standards Jour. Research* 17: 131, 1936.

TABLE 25

AVERAGE ERRORS OF g-VALUES

N	Type of Level	Number of Levels	$\bar{N}$	$\bar{D}$	$\bar{D}'$
51 to 10	Low Even	30	21.5	5.4	5.5
10 to 5	Low Even	12	7.1	5.6	6.0
	Odd	86	6.3	6.4	7.0
	High Even	10	5.8	8.6	9.4
4 to 3	Odd	28	3.4	6.2	10.8
	High Even	14	3.3	9.0	7.4
2	Odd	84	2	5.6	7.9
	High Even	22	2	8.5	12.0

closely to the maximum of the actual pattern. Components masked by other lines or not capable of interpretation are indicated by "m". A dagger (†) denotes that the measures are insufficient to establish the position of the center, which has been estimated by comparison with the instrumental corrections for other lines (see above).

Similar data for the σ components are given in the next four columns. Unresolved patterns, strongest at the inner edge, the outer edge, or the center, are denoted [37] by A, B, or C. Sharp components are denoted by S, and "unaffected" lines (for which both g's are unresolvably small), by U. The values of J and g for the two terms involved in each line are given in the last four columns—g_1 corresponding to the level with larger J. These values are derived from the data for the individual line for completely resolved patterns; otherwise the mean value of g found from other lines for one term is used to find g for the other. The assumed values of g are given in parentheses, both for unresolved patterns and for those so badly blended that only Δg can be determined. A few values of lower accuracy are marked with colons. A double colon is used throughout the table to denote unusually doubtful entries.

(29) OBSERVED AND CORRECTED g-VALUES

A comparison of the observed and theoretical g-values for the principal groups of terms indicates that the observed values are systematically too large. Similar discrepancies have been found in other cases

TABLE 26

RESIDUALS OF g-VALUES FROM THEORY (UNIT 0.001a)

Term	J=6	5	4	3	2	1	All
d⁶s²							
a⁵D			− 4	− 3	− 6	− 2	− 15
a³P					+ 6	0	+ 6
b³D				− 7	...	...	− 7
b³F			−15	−10	− 4		− 29
b³G		0	− 2	+11			+ 9
a⁵H	− 4	+5	+11				+ 12
b¹G			−21				− 21
a¹I	+14						+ 14
Sum	+10	+5	−31	− 9	− 4	− 2	− 31
d⁷s							
a⁵P				− 1	−13	− 1	− 15
a³F		+4	− 1	− 2	− 5	− 14	− 18
b³P					− 2	− 11	− 13
c³P					−16	− 34	− 50
a³D			+ 2	+11	+231		+244
a³F			+ 4	+ 3	+ 3		+ 10
a⁵G		−3	+ 1	+ 6			+ 4
b³H	− 2	−1	+11				+ 8
a¹P					−183		−183
a¹D				+28			+ 28
a¹G			+ 1				+ 1
a¹H		0					0
Sum	− 2	0	+16	+ 8	+ 6	− 12	+ 16
d⁸							
c³F			+14	−17	+10		+ 7
All low even terms	+ 8	+5	− 1	−18	+12	− 14	− 8

Term	J=6	5	4	3	2	1	All
z⁷P°			− 3	− 9	0		− 12
z⁷D°		− 3	− 8	− 4	+ 8	− 1	− 8
z⁷F°	−2	− 2	− 7	+13	+ 4	+49	+ 55
z⁵P°				−10	+ 2	−13	− 21
z⁵D°			+ 2	0	+ 3	− 5	0
z⁵F°		− 1	+ 5	0	+ 4	−12	− 4
Sum	−2	− 6	−11	−10	+21	+18	+ 10
y⁵D°			− 4	− 8	− 5	− 8	− 25
y⁵F°		+17	− 6	− 6	− 2	−16	− 13
z⁵G°	−1	−49	−47	−30	+ 2		−125
y³D°				− 9	−16	− 7	− 32
y³F°			− 4	+ 3	+21		+ 20
z³G°		+48	+50	+41			+139
y⁵P°			− 6	+ 3	+ 2		− 1
x⁵D°		−11	+ 4	+ 1	− 2		− 8
x⁵F°		−10	−22	+ 4	− 2	− 6	− 36
z³P°					− 7	− 4	− 11
z³D°				−12	+ 1	+13	+ 2
z³F°			0	+ 3	+15		+ 18
y⁷P°			0	− 9	+ 7		− 2
z⁵S°					−15		− 15
Sum	−1	+ 6	−44	−25	+ 3	−28	− 89
Odd terms	−3	0	− 55	−35	+24	−10	− 79
e⁷D		−15	+ 5	+ 5	+ 9	+ 2	+ 6
e⁵D			+ 2	+ 8	+ 3	+18	+ 31
c⁵F		+21	−19	−14	− 9	+ 7	− 14
e³F			+38	+24	−45		+ 17
Sum		+ 6	+26	+23	−42	+27	+ 40

and probably arise from an error in the calibration constant, which was determined from a few persistent lines of other elements which appeared on the plate. It is not certain that the mean field was the same for the regions where these lines and those of iron were emitted. A close agreement with theory can be obtained by multiplying the observed g-values by the factor 0.987.

Table E (pp. 203–206) gives the observed and corrected g-values for all levels of Fe I for which they have been determined. The first column gives the designation, the second, the mean g-value resulting from the second approximation described above (giving half weight to a few weak determinations). The third and fourth give the numbers R of resolved patterns, and U of unresolved patterns or patterns disturbed by blending, upon which this mean is based, and the fifth (A. D.), the average residual, without regard to sign, for the individual determinations, in units of 0.001a. The sixth column gives the g-value corrected as just described, and the last, the residual excess of this above the predictions of Lande's theory. The uncorrected g-values should be used for comparison with table D; the corrected values, for all other purposes.

The means, without regard to sign, of the individual discordances D, grouped according to the number of determinations N for the various levels, are given in table 25. The last column gives $\bar{D}' = \bar{D}\sqrt{\bar{N}/(\bar{N} - 1)}$, which should be a fair, though not an exact, approximation to the average error of one determination of g. The weighted means of this (still in units of 0.001a) are 5.6 for the low even levels, 7.3 for the odd, and 11.1 for the high even levels. If two wildly discordant values are rejected, the last becomes 9.7. Multiplying by 0.85, the probable error of an average determination of g may be estimated as ±0.005a for the low even levels, ±0.006 for the odd, and ±0.009 for the high even levels.

The better-determined g-values in table E should have probable errors of 0.001 to 0.003a. The deviations from the theoretical values for most of the higher levels are very much greater, indicating the existence of large perturbations.

Perturbations may be anticipated between neighboring levels of the same parity, and with the same J —irrespective of multiplicity, L-value, and electron configuration. Within a group of isolated terms the g-sums for each J should be unaffected. The even levels below 34000 form such a group. There are two groups of odd terms, between 19000 and 30000, and 33000 and 42000, and one of high even terms, between 42000 and 49000. The residuals for these terms are collected in table 26. The theoretical g-sum for all the low even terms is 61.333; for the odd terms, 101.000; for the high even terms, 24.000. The observed sums are 61.225, 100.901, and 24.040. Taken separately, these indicate additional calibration fac-

tors of 0.9999, 0.9991 and 1.0017. Together they give 0.9995—a negligible correction.

Some interesting perturbations appear in this table. The terms involved are:

Desig	Level	Residual	Desig	Level	Residual
c^3P_1	24772	− 37	$z^5G_6°$	34782	−48
a^3D_1	26406	+228	$z^3G_5°$	35379	+51
a^1P_1	27543	−181			
Sum		+ 10			+ 3
$z^5G_4°$	35257	− 43	$z^5G_3°$	35611	−31
$z^3G_4°$	35767	+ 53	$z^3G_3°$	36079	+42
Sum		+ 10			+11

Perturbations of the g-values are accompanied by mutual repulsion of the levels involved and by strong intersystem combinations. The repulsion of a^1P_1 lowers a^3D_1 below a^3D_2, and that of $z^3G_5°$ puts $z^5G_5°$ below $z^5G_6°$, interrupting the usual sequence of the components for both terms. The combination of $z^5G°$ with a^3F produces the very strong line at λ 4383, and other intersystem lines are exceptionally strong; and a^1P and a^3D show a marked tendency to combine strongly with the same terms.

The higher levels, both odd and even, are closely packed, and the perturbations are great. For example, the configurations $(a^5D)4d$ and $(a^4D)5s$ give rise to 50 levels, lying between 50342 and 52257, all but one of which are known. For the higher J-values all the g's are known and the sum-rule holds—the algebraic sums and arithmetic means of the residuals being +18, ±13 for J = 6; +5, ±40 for J = 5; +8, ±64 for J = 4; for smaller J's some g's are missing. The identity of e^5G_2 appears to be conclusively settled by multiplet intensities, despite the enormous perturbation of +620, but in a case like this the levels of the same J share all their properties and an exact specification is illusory.

TABLE D
OBSERVED ZEEMAN PATTERNS OF Fe I

λ	No. Meas.	π			No. Meas.	σ			J_1	Obs. g_1	J_2	Obs. g_2
		π Components				σ Components						
6494.985	1	0	D		1	975	A		6	(1178)	5	1219
6430.851	4	0	168	341	5	1011	1180	1348	4	1521	3	1692
6421.355	1	0			1	1522	C		2	(1526)	2	1518
6419.982	2		106	177	5	1282	1332	1475	3	1334	3	1275
6411.658	3	0	334	668	4	857	1193	1544	3	1528	2	1863
6408.031	2	0	1005		2	512†	1464†		2	1515	1	(2520)
6400.010	4	0	165	340	5	1021	1187	1321	4	1502	3	1665
6393.605	3	0	060	132	1	818	m	m	5	1058	4	1118
6380.748	1	0			1	687			2	(682)	2	692
6355.038	2	0	332		2	852	1178		2	1180	1	1509
6336.835	1	995			2	1532	2507		1	2517	1	1532
6335.335	3	023	332	661	3	791	1125	1517	3	1501	2	1848
6322.693	4	0	172	354	3	1493:	1609	1784	4	1257	3	1081
6318.022	3	0	068	157	2	622	691		4	826	3	894
6315.316	2			302	5	1292	1393	1425	3	1079	3	1180
6302.507	1	0	S		1	2507	S		1	2507	0	0
6301.515	2		340	664	4	1535	1897:	2179	2	1861	2	1528
6297.800	2	0	1009		2	509	1536		2	1518	1	2527
6270.238	1	0	S		1	509	S		1	509	0	0
6265.140	2		346	518	6	1517	1683	1850	3	1685	3	1515
6256.370	3	588	873	1166	5	825	1111	1421	4	1113	4	824
6254.262	1	0	D		1	1530	B		2	(1526)	1	1522
6252.561	6	0	083	167	1	758			6	(1178)	5	1261
6246.334	3	186	340	498	6	1518	1678	1841	3	1684	3	1528
6232.661	2	0	335		2		1876	2208	2	1875	1	1542
6230.728	1	047	B		1	1265	C		4	1271	4	1259
6219.290	2	332	665		4	1519	1842	2177	2	1847	2	1517
6215.152	3	0	103	179	1	940:	B		3	(768)	2	679
6213.438	1	1014			2	1517	2528		1	2528	1	1517
6200.323	3	0	430	848	3	1101	1521	1952	3	1100	2	675
6191.562	1	0	D		1	831	A		5	(1052)	4	1107
6180.212	2	0	283						4	(1065)	3	1348
6173.343	1	0	S		1	2531	S		1	2531	0	0
6170.492	1		621						2	1476	2	(1166)
6165.366	3	0	172	331	3	445	607	749	4	920	3	1080
6157.734	1			327	4	1022	m	1288	4	1202	4	1287
6141.734	2	0	155						3	(1677)	2	1522
6137.696	1	0			1	1102			3	(1087)	3	1117
6136.999	3	0	649	1355	1	2179:	B		2	(1844)	1	1509
6136.620	1	0	D		1	881	B		4	(822)	3	802
6102.178	2	0	166		1	879	B		2	682	1	(505)
6078.496	1	0			4	946	1022	m	3	1092	2	(1166)
6065.487	1	0			1	690			2	(672)	2	708
6055.987	4	0	185	396	2	615	m	m	4	1156	3	(1341)
6027.057	5	0	96	196	2	781†	942†		5	(1176)	4	1275
6024.066	1	0	D		1	1131	A		5	1237	4	(1263)
6008.577	1	0	D		2	1171	1226		4	1304	3	(1348)
6003.033	1	0			1	1288			4	(1267)	4	1309
5987.057	2	0	312						2	(1166)	1	1478
5984.805	3	0	126	268	3	1089	1250	1348	3	1349	2	1479

TABLE D—(Continued)

λ	No. Meas.	π Components π			No. Meas.	σ Components σ			J₁	Obs. g₁	J₂	Obs. g₂
5976.799	1	0			1	1087	1135	1211	3	1089	3	1130
5952.749	1	0			1	655	C		2	(690)	2	620
5934.658	1	0	D		1	1020	A		3	1129	2	(1183)
5930.173	2	0	208:		1	1166	B		3	853	2	(696)
5914.16	1	0	D		1	1176	B		4	1120	3	(1100)
5709.378	2		468	602					4	1520	4	(1370)
5701.553	1	0	D		1	998	A		4	(1251)	3	1335
5662.525	3	0	088	158	1	1203	A		5	(1442)	4	1512
5658.826	3	232	506	754					3	1519	3	(1267)
5624.549	2	523	1005		4	1028	1530	1960	2	1528	2	1023
5615.652	1	0	D		1	1035	A		5	(1418)	4	1514
5602.955	1	1509			1	60:	1545		1	1527	1	(−12)
5586.763	3	0	148	292	2	944	1058		4	1382	3	1528
5576.097	1	U			1	U			1	0	0	0
5572.849	3	0	250	498	4	780	1026	1273	3	1274	2	1522
5569.625	2	0	503		2	520	1042		2	1033	1	1546
5565.708	1	0			1	1089			3	(1100)	3	1078
5563.604	1	0			1	1519			3	1515	2	(1513)
5506.782	3	0	507	1008	2		2087	2521	3	1513	2	(1008)
5501.469	2	0	255						4	1519	3	(1264)
5497.519	2	0	1521		2		1559	3034	2	1514	1	−8
5476.571	1	0			1	1511			4	(1515)	4	1507
5455.613	1	1513			2	0	1522		1	1522	1	9
5446.920	2	508	1007		4	1021	1522	2028	2	1524	2	1020
5434.527	1	U			1	U			1	0:	0	0:
5429.699	3	252	506	753	6	1278	1525	1770	3	1523	3	1274
5424.072	1	0	D		2	1127	A		7	1315	6	(1346)
5415.201	1	0	D		1	1127	A		6	1247	5	(1264)
5410.913	1	0	D		1	1127	B		4	882	3	(801)
5405.778	2	0	504		3	514	1021	1522	2	1019	1	1523
5404.144	1	0	D		1	1151:	B		5	1124	4	(1117)
5397.131	4	309	456	600	7	1361	1519	1665	4	1520	4	1372
5393.174	1	0			1	1520			4	1518	3	(1517)
5383.374	1	0	D		1	1075	A		6	1207	5	(1233)
5371.493	4	0	249	499	5	773	1026	1271	3	1274	2	1524
5369.965	1	0	D		1	1115			5	1117	4	(1117)
5367.470	1	0	D		1	958†	B		4	913:	3	(898)
5365.403	1	0	D		1	955	A		5	(1013)	4	1027
5364.874	1	0	D		1	793	B		3	490	2	(339)
5341.026	2	494	983		4	671	1186	1692	2	1183	2	684
5328.534	3	205:	476:	720:	6	622†	861†	1147:†	3	1347	3	(1100)
5328.042	4	0	149	295	6	930	1072	1207	4	1365	3	1510
5324.185	1	0			1	1535			4	(1519)	4	1551
5302.307	1	0	D		1	1539	B		2	(1519)	1	1529
5283.628	1	0			1	1530			3	(1517)	3	1543
5281.796	4	0	574	1214	3	597	1188	1778	3	1779	2	2370
5273.379	1	0	S		1	511	S		1	511	0	0
5273.176	1	0	S		1	1542	S		1	1542	0	0
5270.360	2	0	165		3	533	680	848	2	687	1	527
5269.541	2	0	187		1	1064	A		5	(1422)	4	1512
5266.562	4	0	269	540	3	893	1159		4	1672	3	1936
5263.314	1	0			1	1525			2	(1521)	2	1529
5250.650	3	0	158	320	2	1366	1522		3	1681	2	1839
5242.495	1	0	D		1	991			6	1024	5	(1029)
5232.946	4	0	148	296	3	1045	1167	1275	5	1605	4	1751

TABLE D—(*Continued*)

λ	π Components No. Meas.	π			σ Components No. Meas.	σ			J_1	Obs. g_1	J_2	Obs. g_2
5227.192	1	0	D		1	991:	A		3	(1100)	2	1155::
5226.868	2	292	664		4	2043	2368	2717	2	2376	2	2033
5217.395	1	0	D		1	1523	A		4	(1519)	3	1518
5216.278	1	0			1	688	C		2	(679)	2	697
5208.601	1	0	D		1	1528	A		3	(1517)	2	1512
5202.339	1	0			2	1693:	m		3	(1688)	3	1698
5198.714	2	0	668		2	1191	1854		2	1855	1	2520
5194.943	1	0			1	1102			3	(1100)	3	1104
5192.350	2		364	503	2	m	2096	2232	3	1937	3	1785
5191.460	2	0	665		1	1705	A		2	2370	1	3035
5171.599	1	0			1	1273			4	(1271)	4	1275
5167.491	1	0	D		1	1101	A		4	(1271)	3	1328
5150.843	3	0	255	512	1	1791†	B		3	1268	2	(1008)
5142.932	3	0	111	219	2	1682†	B		4	1374	3	(1264)
5141.747	1	1017			2	501	1513		1	1513	1	501
5139.468	2		295	380	1	1695:	C		4	(1774)	4	1689
5137.388	1	0	D		2	1395	A		5	(1442)	4	1454
5133.692	1	0	D		5	m	1007	1110	6	1340	5	1452
5131.475	1	0			1	2527			1	(2526)	1	2528
5127.363	2	0	050		1	m	1566†	m	5	1416	4	1366
5123.723	1	U			1	U			1	0	1	0
5110.414	3	307	459	607	1	m	m	m	4	1669	4	(1516)
5107.645	3	0	407	820	3	1084:	1514	1918	3	1105	2	698
5107.452	1	0			1	1015			2	(1008)	2	1022
5098.703	3	0	164	332	4	1357	1517	1674	3	1678	2	1840
5096.998	4	0	142	306					3	1157	2	(1010)
5083.342	1	0			1	1269	C		3	(1264)	3	1274
5079.742	2	0	1010		2		1136	2022	2	998	1	−12
5079.226	2	0	686		2	1171	1849		2	1851	1	2533
5074.757	1	0	D		1	878	A		5	1264	4	(1361)
5068.774	1	0	D		1	1782			4	(1774)	3	1771
5065.020	3	0	169	321					4	1103:	3	(1263)
5051.636	1	0			1	1370	C		4	(1367)	4	1373
5049.825	3	0	181	361	4	987	1162	1341	3	1341	2	1520
5041.759	4	0	159	316	4	1431	1586	1736	4	1270	3	1113
5041.074	3	0	262	533	3	1238	1518	1775	3	1261	2	1004
5028.129	2	0	m	122	1	m	810		5	(1013)	4	1074
5022.244	1	0	D		1	582	B		2	(690)	1	798
5014.950	2	0		129:	1	991	A		3	(1101)	2	1156
5012.071	1	0			1	1422			5	(1422)	5	1422
5006.126	1	452	B		1	m	m	1779:	5	1608	5	(1518)
5001.871	2	0	117		2	986	1071		4	(1267)	3	1363
4994.133	3	0	102	195	3	1455	1572	1678	4	1364	3	1262
4985.261	1		B	123	1	1255	C		2	(1183)	2	1121
4973.108	1	303			2	507	840		1	825	1	522
4966.096	1	0			1	1434			5	(1418)	5	1450
4957.603					1	1135	A		6	(1522)	5	1600
4957.302	3	303	406	674					4	(1515)	4	1675
4891.496	4	0	262	501	4	769	1035	1297	4	1522	3	1773
4890.762	2	560	964		2	1560	2084	2561	2	2050	2	1538
4871.323	3	0	492	1009	4	546	1015	1533	3	1533	2	2031
4859.748	2	0	1511		3	0	1538	3000	2	1513	1	3028
4789.654	1	0			1	987	C		2	(1041)	2	933:
4786.810	3	0	127	248	2	1135	1226		3	1375	2	1500
4741.533	1	0	D		1	1493	A		3	1510	2	(1518)

TABLE D—(*Continued*)

λ	No. Meas.	π Components π		No. Meas.	σ Components σ			J₁	Obs. g₁	J₂	Obs. g₂
4736.780	3	0	092	198	1	1096	A		5	1429	4	(1519)
4710.286	1	0			1	774	C		3	(774)	3	774
4707.487	1	0	D		1	1566	B		2	1551	1	(1509)
4707.281	4	0	170	314	3	841	991	1147	4	1348	3	1517
4691.414	1	0			1	1068			4	(1068)	4	1068
4678.852	3	0	127	260	3	1167	1264	1448	4	1549	3	1677
4668.142	3	0	266	547	3	742	978	1249	3	1253	2	1510
4654.501	3	0	265	529	3	1597:	1890	2159	4	1359	3	1093
4647.437	1	0			1	1222			5	1216	5	1228
4638.016					1	1697	C		3	1717	3	(1677)
4637.512	2	0	521		1	504	A		2	1004	1	(1519)
4630.125	1	0			1	1536			3	1529	2	(1526)
4625.052	2		521	788	1	1267†	m		3	(1517)	3	1250
4619.294	1	0	D		1	1754	B		3	(1677)	2	1638
4613.210	1	U			1	U			1	0	0	0
4611.285	1			230					2	(1860)	2	1975
4602.944	5	0	148	298	6	1712	1858	2006	5	1420	4	1274
4598.122	1	1515			2	0	1522		1	1522	1	7
4592.655	1	158	335	496	6	1105	1265	1429	3	1264	3	1102
4587.132	1	0	D		1	1090	B		5	(1013)	4	994
4556.129	2	0	162:		3	1312†	1498†	1702†	3	(1677)	2	1860
4547.851	1	0	D		1	1013	A		3	(1032)	2	(1041)
4531.152	2	m	298	389.	4	1266†	1355†	1454†	4	1362	4	(1271)
4528.619	4	0	168	336	6	1024	1187	1357	4	1519	3	1684
4525.142	1	473	B		1	1201	m	m	3	(1677)	3	1519
4517.530.	1	142			1	1573	C		1	1627	1	(1485)
4494.568	3	0	322	645	5	891	1215	1536	3	1537	2	1859.
4490.084	2	0	413		3	1098	1508	1859:	2	1509	1	1920
4489.741	1	0	S		1	1573	S		1	1573	0	0
4484.227	4	0	178	369	5	967†	1146†	1314†	4	1503	3	1677
4482.257	2	0	1003		3	528	1526	2522	2	1525.	1	2525
4482.171	1	0			1	1525			2	1522	1	(1518)
4480.142	3	731	1054	1416	5	1044†	1399†	1625:†	4	1360	4	(1013)
4479.612	2	0	892						2	1628	1	(2520)
4476.021	2	0	293		3	931	1225	1513	2	1223	1	1515
4469.381	3	0	173	351	3	1336	1465	1647	3	1686	2	1861
4466.554	3	0	145	288	4	1096	1226	1361	3	1369	2	1510
4461.654	1	0			1	1571	B		3	1533	2	(1514)
4459.121	3	174	332	492	6	1521	1664	1822	3	1679	3	1521
4454.383	2	306	607		4	1225	1520	1822	2	1523	2	1224
4447.722	1	1003			2	1520	2523		1	2523	1	1520
4443.197	1	0	S		1	572	S		1	572	0	0
4442.343	2	328	650		4	1526	1842	2172	2	1847	2	1526
4433.223	2	0	591		3	1260†	1865†	2549:†	2	(1860)	1	2460
4430.618	1	0	S		1	2528	S		1	2528	0	0
4430.197	2	0	113		1	1481:	A		2	(1504)	1	1617
4427.312§	{ 1	0			1	1532			4	1522	3	(1518)
	2		305:	597	2	1895†	2200†		2	(1860)	2	1560
4422.570	1	942			2	576	1508		1	1508	1	576
4415.125	3	0	213	446	5	912	1133	1374:	3	909	2	687
4408.419	2	0	332		3	1523	1855	2178	2	1852	1	1522
4407.714	3	0	160	326	4	1695	1873	2015	3	1693	2	1531
4404.752	1	0	D		1	1166	B		4	1116	3	(1100)
4401.293	2		371	521					3	(1677)	3	1510
4390.954	4	0	132	264	5	1038	1172	1301	4	905	3	773

§ Two superposed Zeeman Patterns.

TABLE D—(*Continued*)

λ	π Components				σ Components				J_1	Obs. g_1	J_2	Obs. g_2
	No. Meas.	π			No. Meas.	σ						
4388.412	1	0			1	1702	C		3	1727	3	(1677)
4387.897	1	430			2	1489	1933		1	1933	1	1489
4383.547	1	0	D		1	1161	A		5	1249	4	(1271)
4377.793	1	0	D		1	1193	B		2	967	1	(741)
4375.932	1	0			1	1524			5	1518	4	(1516)
4373.563	1	0			1	790			3	765	2	(752)
4369.774	1	99	B		1	1044	C		4	1031	4	1056
4367.581	1	0			1	1126	B		5	1075	4	(1062)
4358.505	5	0	141	282	3	652	794	935	5	1220	4	1362
4352.737	2	0	516		3	1496	2007	2518	2	2007	1	2520
4337.049	3	209	403	598	6	910	1108	1301	3	1103	3	908
4325.765	3	0	122	248	3	808	928	1049	3	806	2	684
4315.087	2	164	319		4	1842	2004	2148	2	2000	2	1847
4309.380	1	0			1	1213	A		6	1215	5	(1216)
4309.036	1	56	B		1	1034	C		6	1039	6	(1030)
4307.906	1	0	D		1	1133	B		4	(1117)	3	1112
4305.455	2	0	404		2	1110	1515		2	1514	1	1918
4302.191	1	0:	B		2	m	1132	1189	4	1070:	4	(1013)
4298.040	5	0	210	402	3	1631	1830	2035	5	1217	4	1013
4294.128	4	293	435	581	7	1132	1274	1406	4	1271	4	1129
4288.148	1	0			1	778	C		3	(766)	3	790
4285.445	1	0			1	1191			6	(1180)	6	1202
4282.406	3	0	320	639	5	1060	1379	1700	3	1695	2	2013
4271.764	1	0			1	1262			5	1269	4	(1271)
4271.159	3	0	097	203	3	1377	1478	1575	4	1675	3	1774
4267.830	1	0	S		1	1570	S		1	1570	0	0
4266.968	1	0			1	1063			4	(1065)	4	1061
4260.479	1	0			1	1617			5	(1621)	5	1613
4250.790	3	292†	595†	904†	6	812	1109	1405	3	1108	3	806
4250.125	3	0	285	545	4	1259	1533	1784	3	1783	2	2045
4247.432	1	0			1	1388	B		5	1374	4	(1370)
4246.090	3	0	160	324	1	1235:†	A		3	1343	2	(1504)
4245.258	1	0	S		1	1911	S		1	1911	0	0
4239.847	1	0			1	1222			5	(1213)	5	1231
4238.816	1	0	D		1	1215	A		4	1254	3	(1267)
4235 942	1	0			1	1680	C		4	(1661)	4	1699
4233.608	2	0	1005		3	1026	2032	3037	2	2032	1	3037
4227.434	1	0	D		1	1125	A		6	1369	5	(1418)
4225.460	3	0	307	559	2	1305†		1918†	3	1306	2	(1017)
4224.176	3	0	130	287					5	1517	4	(1370)
4222.219	1	0			1	1786	C		3	(1771)	3	1801
4220.347	1	0	S		1	1478	S		1	1478	0	0
4219.364					1	1074	B		6	1023	5	(1013)
4216.186	3	512	764	1016					4	(1774)	4	1522
4210.352	1	0			1	3050			1	(3033)	1	3067
4207.130	2	0	395		1	1138	m	m	2	1533	1	1928
4203.987	1	0	D		1	1445	A		2	1477	1	(1509)
4202.031	4	305	451	599	8	1123	1274	1419	4	1266	4	1121
4199.098	1	0	D		1	1075	B		5	1026	4	(1013)
4198.310	1	0	D		1	1498	A		5	(1621)	4	1652
4195.337	1	194	B		2	1382	m	1466	5	1418	5	1378
4191.436	2	0	1008		2	1032	2030		2	2032	1	3035
4187.802	2	0	96		2	1379	1464	m	4	(1661)	3	1756
4187.044	3	0	252	497	4	1283	1535	1774	3	1779	2	2027
4184.895	1	124	B		1	1552:†	C		2	1456	2	(1518)

TABLE D—(*Continued*)

λ	No. Meas.	π			No. Meas.	σ			J₁	Obs. g₁	J₂	Obs. g₂
		π Components				σ Components						
4181.758	3	0	097	207	3	1210	1317	1436	3	1422	2	1526
4175.640	2	0	225		3	1058	1295	1471	2	1288	1	1511
4172.126	3	0	132	262	3	1107	1210	1316	3	1355	2	1486
4156.803	2	202	476		4	1300	1559	1778	2	1527	2	1289
4154.812	1	0	D		1	1482	B		5	1392	4	(1370)
4147.673	1	0	D		3	1732	2190	2658	4	1267	3	804
4143.871	4	0	164	332	6	1443	1594	1751	4	1268	3	1105
4137.002	2	0	209		2	1039	1246		2	1038	1	830
4134.681	3	0	156	300	2	1066	1202		3	1364	2	1517
4132.903	2	0	304		2	956	1226		2	1231	1	1511
4132.060	3	0	425	851	4	1109	1532	1958	3	1107	2	682
4127.612	1	0	S		1	781	S		1	781	0	0
4118.549	1	0	D		1	1074			6	1023	5	(1013)
4114.449	1	590	B		3	938	1223	1516	2	1518	2	1229
4109.808	1	748			2	779	1514		1	1514	1	779
4107.492	1	m	92		1	1610	B		2	1518	1	1426
4095.975					2	828	953		3	1078	2	1203
4085.011	2	0	354		2	803	1146		2	1151	1	1505
4084.498					1	1106	A		5	(1418)	4	1496
4079.848	1	0	S		1	1902	S		1	1902	0	0
4078.365	2	0	110		2	667	784		2	669	1	556
4076.636	1	93	B		1	1514	C		4	(1519)	4	1509
4074.794					5	1016	1185	1388	4	1197	4	1011
4071.740	1	0			1	692	C		2	(696)	2	688
4067.984	1	313	B		1	1575	C		4	(1519)	4	1597
4067.275	1	0	D .		3	869	978	1097	4	(1251)	3	1378
4066.979	1	734	B		4	1154	1507	1868	2	1511	2	1148
4063.597	1	0			1	1094			3	(1100)	3	1088
4062.446	1	406			2	1506	1922		1	1915	1	1509
4055.039					1	1123	A		5	1226	4	(1251)
4045.815	1	0			1	1263			4	(1272)	4	1254
4021.869	4	0	135	270	6	1027	1160	1286	4	895	3	762
4017.156					5	1475	1636	1791	5	1167	4	1012
4014.534	1	0			1	1014	C		5	(1013)	5	1015
4009.714	2	0	841†		3	1163†	1854†	2520†	2	1848	1	(2526)
4007.277	1	0	D		1	767	B		3	(766)	2	765
4006.631	1	0	S		1	1405	S		1	1405	0	0
4005.246	3	0	421	842	5	1097	1506	1921	3	1095	2	678
4003.764	1	122			2	716†	828†		1	(830)	1	708
4001.666	1	0			1	1684	C		3	(1688)	3	1680
4000.466	4	298	399	527	8	1061	1193	1313	4	1190	4	1062
3998.054	4	0	145	282	7	648	789	927	5	1214	4	1356
3997.394	1	0	D		1	1107	B		5	1073	4	(1065)
3996.968					1	1004			4	(1006)	4	1002
3995.996	3	0	303	612	5	166	464	761	4	1063	3	1364
3994.117	4	0	77	148	1	1379	B		5	1079	4	1004
3990.379	1	315	B		3	861:	925:	993:	4	998	4	926
3986.176	4	0	218	440	7	489	708	921	4	1136	3	1353
3983.960	4	0	118	234	4	690	818	952	4	1072	3	1198
3981.775	3	325	492	679	6	898	1031	1227	4	1063	4	894
3977.743	1	0			1	1846			2	(1844)	2	1848
3976.615	2	0	351		2	1157	1503		2	1157	1	811
3973.655	1	0	D		1	1197	B		3	1093	2	(1041)
3971.325	4	0	154	298	7	617	761	912	5	1217	4	1370
3970.391	1	0	S		1	1477	S		1	1477	0	0

TABLE D—(Continued)

λ	π Components				σ Components				J₁	Obs. g₁	J₂	Obs. g₂
	No. Meas.	π			No. Meas.	σ						
3969.261	4	0	165	330	7	1425	1586	1747	4	1264	3	1101
3967.423	1	0	D		1	842	B		4	(822)	3	815
3966.066	2	0	958		3	1345†	2014†	2683†	3	(1341)	2	672
3965.511					1	1397	A		4	1487	3	(1517)
3964.522	2	0	266		3	1535†	1823†	2060†	2	1771	1	(1509)
3963.108					3	483	959	1382:	2	980	1	(1519)
3961.147	1	0	S		1	2240	S		1	2240	0	0
3956.681	1	0	D		1	1220	B		6	1214	5	(1213)
3956.459	1	0	D		1	1325	B		6	(1180)	5	1151
3955.956	1	061			1	1436			1	1467	1	1406
3953.861	2	0	280		3	698†	962†	1235†	3	1244	2	(1518)
3953.156	4	0	173	343	3	1096	1262	1429	4	932	3	764
3952.702	2	0	219		3	1024	1273	1503	2	1273	1	1503
3952.606	3	432	569	706	8	1068	1209	1310	5	1208	5	1069
3951.164	2	0	302		3	731	1036	1335	2	1034	1	732
3949.954	3	0	170	338	5	1353	1519	1683	3	1684	2	1852
3948.779	1	0	D		1	949	A		5	(1046)	4	1070
3948.105					2	857	1090		4	1373	3	(1520)
3947.533	1	502	B		4	1146	1522	1898	2	1769	2	(1518)
3945.119	4	0	407	806	7	1894	2273	2638	4	1145	3	755
3944.890	4	0	104	208	6	1397	1509	1625	5	1187	4	1076
3943.339	2	0	643		3	1216	1852	2465	2	1844	1	2481
3942.443	2	0	222		3	1060	1286	1558:	2	1285	1	1509
3940.882	2	0	257		3	1772	2014	2266	4	1517	3	1267
3937.329	4	0	324	650	7	1841	2158	2479	5	1203	4	883
3935.815	1	461	B		4	1059	1285	1516	2	1516	2	1287
3932.629	5	0	255	512	7	1819	2086	2317	5	1313	4	1059
3930.299	1	0			1	1515			2	(1514)	3	1514
3927.922	1	0			1	1514			2	1516	1	(1518)
3925.946	1	0	S		1	1578	S		1	1578	0	0
3925.646	1	500	B		4	1283	1518	1755	2	1519	2	1276
3922.914	1	0			1	1517			4	1516	3	(1516)
3920.260	1	0	S		1	1518	S		1	1518	0	0
3919.069	2		412	543	3	921	1054	1182	4	1052	4	921
3918.644	1	0			1	771			3	(771)	3	771
3917.185	3	0	513	1045	4	1517	2018	2496:	3	1514	2	1006
3916.733	2	0	111		3	1503	1618	1719	6	1175	5	1065
3914.273	1	952†			1	1518	C		1	2470::	1	(1518)
3913.635	1	0	D		1	1477	A		3	1510	2	(1526)
3909.830	1	64			1	1541	C		1	1573	1	1509
3907.937	2	0	302		3	794	1069	1352	3	780	2	489
3906.748	3	0	147	275	4	1342†	1493†	1644†	3	1341	2	(1194)
3903.902	3	256	368	488	7	937	1055	1176	4	1054	4	935
3902.948	3	254	501	750	6	1096	1342	1583	3	1341	3	1095
3899.709	1	0			1	1518	C		2	(1514)	2	1522
3898.012	2	0	1525		3	0	1512	3022	2	1518	1	—10
3897.896	5	0	110	228	4	1651		1858	6	1323	5	1213
3895.658	1	0	S		1	1518	S		1	1518	0	0
3893.924	3	502†	682†	855†	6	m	1378	1554	5	1218	5	1047
3893.391	1	207	B		1	1205†	C		5	1223	5	1182
3891.928	1	458			2	1275	832		1	1277	1	830
3890.844	4	0	124	252	6	1183	1306	1424	4	1065	3	943
3888.517	2	508	1019		4	678	1177	1666	2	1172	2	674
3887.051	4	311	461	611	8	1367	1514	1667	4	1517	4	1367
3886.284	1	0			1	1519			3	(1517)	3	1521

TABLE D—(*Continued*)

λ	No. Meas.		π		No. Meas.		σ		J_1	Obs. g_1	J_2	Obs. g_2
3885.512	2	0	307		3	899†	1213†	1512†	2	1210	1	(1520)
3884.359	2	0	174		5	1563†	1726†	1895†	5	(1213)	4	1040
3883.282	1	67	B		1	1335	C		3	1346	3	1324
3878.575	2	0	74		1	1522	B		2	(1514)	1	1506
3878.021	3	258	509	765	6	1262	1512	1759	3	1511	3	1260
3876.043	2	0	1535		2	0	1516	m	2	1516	1	−19
3873.763	1	0	B		1	1004	A		5	(1052)	4	1064
3872.504	2	513	1019		4	1009	1507	2004	2	1508	2	1006
3871.750	2	m	520	630	7	1080	1208	1329	5	1208	5	1083
3869.562					7	1505	1664	1792	5	1217	4	1069
3865.526	1	1536			2	0	1510		1	1510	1	−26
3861.341	2	0	463		3	743	1168	1600	2	1170	1	740
3859.913	1	0			1	1515			4	(1516)	4	1514
3859.214	1	0	D		1	1040	A		6	(1178)	5	1206
3856.373	1	0			1	1520			3	(1517)	2	1515
3852.574	4	0	178	359	5	979	1153	1335	4	1511	3	1689
3850.820	2	523	1024		4	1016	1505	2021	2	1511	2	1014
3849.969	1	U			1	U			1	0	0	0
3846.803	1	0			1	1340			3	(1353)	3	1327
3846.412					1	1017			5	(1013)	4	1012
3845.170	1	973			2	564	1514		1	1520	1	558
3843.259	1	0	D		1	992	A		4	(1013)	3	1020
3841.051	2	0	172		3	497†	679†	850†	2	(679)	1	506
3840.439	2	0	514		3	486	1009	1514	2	1006	3	1516
3839.259	1	81	B		1	1044	C		4	993	4	(1013)
3837.132	3	0	506	1013	3	1164	1658	2155	3	1158	2	657
3836.332	1	0			1	1178			2	(1194)	2	1162
3834.225	3	0	254	506	5	749	1014	1261	3	1258	2	1511
3833.311	2	m	333	432	6	1230	1339	1461	4	1348	4	1246
3829.458	1	0			1	732	C		1	(741)	1	723
3827.825	1	0	D		1	989	A		3	(1100)	2	1155
3825.884	4	0	152	301	5	938		1363	4	1368	3	1512
3824.306	1	0			1	822			4	(822)	4	822
3821.834	1	168	B		2	665†	743†		2	753	2	(672)
3821.181	1	0	D		1	951	A		6	1030	5	(1046)
3816.340	1	0	D		4	792†	1133†	1495†	3	1493	2	(1844)
3812.964	3	0	255	507	5	764	1015	1265	3	1262	2	1513
3811.892	2		344	542	4	228†	414†	603†	3	(766)	3	586
3810.759	1	0	D		1	1140	A		2	(1194)	1	1248
3808.731	2	345	467		6	1247	1358	1462	4	1359	4	1244
3807.534	2	0	962		3	585	1552	2519	2	1552	1	2517
3806.697	1	0	S		1	1046	S		5	(1046)	5	1046
3805.345	1	0	D		1	932	B		5	844	4	(822)
3802.283	2	308	638		4	1201	1514	1801	2	1516	2	1197
3801.681	3	0	296	589	4	633	923	1223	3	1224	2	1520
3799.549	2	m	95	194	2	1643	m	1465	4	1358	3	(1264)
3797.948	1	0	D		2	1091†	1431†	m	3	(1087)	2	747
3797.517	1	0			1	1184			6	(1180)	6	1188
3795.004	3	0	254	507	5	1263	1515	1762	3	1264	2	1012
3794.340	1	0	D		1	930	B		5	844	4	(822)
3792.156	3	241	366	471	6	939	1059	1185	4	1063	4	948
3790.095	2	0	512		3	507	1012	1515	2	1011	1	1519
3789.178	1	0	D		1	909	A		5	1034	4	(1065)
3787.883	2	0	1030		3	0	1012	2022	2	1016	1	−14
3786.678	1	U			1	U			1	0	0	0

TABLE D—(*Continued*)

λ	No. Meas.	π			No. Meas.	σ			J₁	Obs. g₁	J₂	Obs. g₂
		π Components				σ Components						
3785.950	1	0			1	1037			6	1054	5	(1052)
3781.188	2	0	489		3	415	890	1364	3	1365	2	1840
3779.444	1	534			2	743	1264		1	1264	1	743
3778.509	3	0	202	411	2		1522	1720	3	(1353)	2	1161
3777.061	1	0	D		1	1126	B		4	1054	3	(1030)
3776.454	3	0	231	470	4	777	992	1232	4	1462	3	1693
3774.823	1	1206			2	1334	2521		1	2521	1	1334
3773.699	1	1059†			4	1856	2348	2843	2	2350	2	1862
3770.305	1			364	3	1115†	1203†	1314†	5	(1213)	5	1143
3769.995	3	0	385†	698†	4	1931	2237	2521	3	1934	2	1632
3768.030	1	0	S		1	2521	S		1	2521	0	0
3767.194	1	U			1	U			1	0	1	0
3765.542	1	0	D		1	1054	A		7	1162	6	(1180)
3763.790	1	0			1	1009			2	(1008)	2	1010
3760.534	2	0	624		3	1304	1910	2512	2	1907	1	2517
3760.052	1	0	D		1	1077	m	m	7	1164	6	(1178)
3758.235	1	0			1	1263	C		3	(1264)	3	1262
3756.069	3	311	651	958	5	1355	1682	1980	3	1680	3	1364
3753.610	3	0	130	253	5	1693	1818	1940	3	1691	2	1564
3749.487	1	55	B						4	(1367)	4	1354
3748.264	2	0	518		3	512	1080	1512	2	1012	1	1521
3745.901	1	U			1	U			1	0	0	0
3745.561	3	0	258	520	5	768	1015	1264	3	1265	2	1518
3743.468	1	85	B		1	1022	C		5	1014	5	1031
3743.364	2	0	1021		3	0	1010	2024	2	1008	1	−10
3737.133	2	m	307	460	·5	932	m·	1360	4	1362	3	1513
3734.867	1	68	B		1	1435	C		5	1428	5	1442
3733.319	1	1542			1	0	1504†		1	1518	1	−24
3732.399	1				1	1871	C		2	1898	2	(1844)
3731.374	2	365†	562†		4	485	668	890	2	675	2	472
3730.945	1	0	D		1	708	B		3	684	2	(672)
3730.386	5	0	139	278	8	1435	1556	1692	5	1144	4	1007
3728.668	3	450†	671†	885†	3	817†	1026†	1258†	4	(1251)	4	1033
3737.621	3	0	259	512	5	1264	1518	1765	3	1265	2	1011
3724.380	3	0	154	306	5	1071	1235	1393	3	1377	2	1530
3722.564	2	515	1032		4	1013	1517	2019	2	1516	2	1014
3719.935	5	0	104	206	4	1004	1105	1201	5	1407	4	1508
3718.407	1	1169	B		5	311†	768†	1223†	3	1226	3	(766)
3716.442	1	0	D		2	1937	B		4	(1774)	3	1720
3715.911	1	638	B		4	906	1207	1522	2	1524	2	1213
3711.411	2	0	446		2	605	1031		2	1041	1	1487
3711.225	1	0	D		1	1046	A		4	1077	3	(1087)
3709.246	4	m	97	208	2	m	m	1682	4	1367	3	1262
3707.918	3	0	234	462	5	650	776	904	3	1686	2	1919
3707.824	2	0	1523		3	0	1475:	3047	2	1514	1	− 9
3705.567	3	258	512	763	6	1263	1511	1762	3	1514	3	1264
3704.463	5	0	140	280	7	1480	1620	1738	5	1210	4	1076
3702.033	1	0	S		1	1504	S		1	1504	0	0
3701.086	4	0	310	620	7	731	1022	1315	4	1626	3	1932
3698.611	2	0	403		4	313	713†	1105	3	1110	2	1510
3697.426	3	671	1298	1924	3	1308	1929	2578	3	1935	3	1304
3695.054	1	0	D		1	1290	B		5	1068	4	(1013)
3694.005	3	0	444	878	5	558	788	1018	3	1920	2	2355
3690.730	1	734	B		4	817†	963†	m	5	(1013)	5	1159
3690.450	1	0	S		1	820	S		1	820	0	0

TABLE D—(*Continued*)

λ	No. Meas.	π			No. Meas.	σ			J₁	Obs. g₁	J₂	Obs. g₂
		π Components				σ Components						
3689.457	4	229	427	643	4	1592	1776	1961	4	1776	4	1581
3687.656	3	297†	416†	530†	3	802†	931†	m	4	1196	4	(1065)
3687.458	1	0	D		1	1594	B		5	(1422)	4	1379
3686.260	1	0	S		1	1512	S		1	1512	0	0
3685.998	5	0	261	518	6	492	751	m	5	1534	4	1794
3684.108	4	0	163	319	7	563	747	906	4	1060	3	1220
3683.054	3	0	513	988	4	1507	2019	2554	3	1521	2	1013
3682.226	1	66	B		1	1015	C		2	1032	2	999
3679.915	4	310	460	609	8	1366	1515	1662	4	1517	4	1368
3677.630	1	0	D		1	912	B		3	(766)	2	693
3677.309	3	0	129	243	2	672†	782†	m	3	921	2	(1041)
3676.314	1	0	D		1	1108	A		5	1222	4	(1251)
3672.722	4	0	254	526	6	1598	1834	2085	5	1078	4	823
3670.810	1	0	S		1	789	S		1	789	0	0
3670.071	1	0	D		1	1060	A		6	1190	5	(1216)
3670.028	1	0	D		1	1480	A		2	1495	1	(1509)
3663.458	1	96	B		1	1267	C		4	1279	4	1255
3659.516	1	285	B		1	820	890		4	892	4	(822)
3657.139	2	0	242		3	1032	1278	1543	2	1277	1	1521
3655.465	1	62	B		1	1501	C		2	1517	2	1486
3653.763	4	0	174	352	7	1759	1941	m	6	1223	5	1046
3651.469	4	0	170	338	7	1095	1263	1420	4	931	3	764
3649.508	1	0	D		1	1267	B		5	(1213)	4	1200
3649.304	3	0	264	540	2		2040†	2292†	4	(1576)	3	1252
3647.844	4	m	129	266	5	711	m	1226	5	1229	4	1360
3645.822	1	0	S		1	714	S		1	714	0	0
3640.388	4	0	103	204	4	1390	1484	1565	5	1172	4	1069
3638.296	4	0	183	364	7	1120	1299	1475	4	942	3	763
3636.995	4	0	146	291	3	509†	650†	810†	4	941	3	(1087)
3636.650	2	0	673		3	−577†	m	820†	3	821	2	1504
3636.234	1	0	D		1	523	A		3	868	2	(1041)
3636.186	3	0	474	940	3	412	900	1354	3	1365	2	1841
3632.042	2	0	312		3	885†	1175†	1479†	2	1182	1	(1485)
3631.464	2	m	m	294	5	692	m...	1113	4	1113	3	1256
3625.140	1	0	D		1	1440	A		5	(1518)	4	1538
3623.187	1	186	B		1	1198	C		6	1214	6	1183
3622.001	1	0	B		1	768	C		3	766	3	(770)
3621.463	1	0	D		1	1151	B		5	1082	4	(1065)
3618.769	3	0	116	230	2	677	788		3	902	2	1015
3618.392	2	m	394†	526†	3	801†	931†	1075†	4	(1065)	4	930
3617.788	3	0	179	358	4	981†	1153†	1327†	3	1328	2	(1504)
3610.159	1	0	B		1	1511	C		6	(1522)	6	1500
3608.861	2	0	351		3	0	341	680	2	338	1	− 7
3606.679	1	0	D		1	927::	A		6	1161::	5	(1213)
3605.450	3	257	388	490	7	949	1067	1185	4	1062	4	948
3603.828	1	787			2	717	1496		1	717	1	1496
3603.205	1	210	B		1	1201	C		5	1180	5	1222
3599.624	5	0	151	301	6	431	557	710	5	1006	4	1154
3594.632	1	295	B		1	1543	C		4	1580	4	1506
3592.486	1	0	D		1	1062	A		4	1081	3	(1087)
3590.086	3	439†	569†	701†					5	(1216)	5	1085
3589.456	3	0	283	593	6	1320	1620	1911	4	1059	3	773
3589.107	1	937	B						5	(1422)	5	1235
3586.985	2	681	1360		3	338	1006	1690	2	1011	2	333
3585.708	4	490	754	998	4	1123	1357	1847	4	1361	4	1115

TABLE D—(*Continued*)

λ	No. Meas.	π			No. Meas.	σ			J_1	Obs. g_1	J_2	Obs. g_2
3585.320	3	360	774	1122	6	887	1265	1632	3	1262	3	890
3584.663	4	332†	464†	585†	8	1107†	1233†	1357†	5	(1213)	5	1088
3582.201	6	0	192	381	7	168†	359†	575†	6	(1180)	5	1368
3581.195	1	0	D		1	987:	A		6	1350	5	(1422)
3575.374	2	337	667		4	1172	1504	1828	2	1504	2	1172
3573.896	2	0	126		1	508	A		4	(822)	3	930
3571.995	1	0	B		1	1523	C		5	(1518)	5	1528
3570.100					1	849	A		5	1263	4	(1367)
3568.977	4	0	273	560	6	1806†	2070†	2341†	5	(1213)	4	940
3567.038					1	919			3	1322	2	(1524)
3565.381	4	0	151	302	7	331	406	474	4	1120	3	1272
3559.506	1	217			2	1204†	1428†		1	(1485)	1	1265
3558.518	3	0	217	431	5	373	584	793	3	793	2	1006
3556.877	2	0	132		2	946	1056		5	1402	4	(1515)
3554.922	1	m	88		1	1049	A		6	1440	5	(1518)
3554.122	1	0	D		3	1262†	2183†	3094†	3	(1264)	2	348
3552.112	1	0	D		1	1518	B		2	1502	1	(1485)
3549.868	2	0	682		3	0	677	1356	2	676	1	− 6
3547.203	3	385	588	780	4	833	1017	1197	4	826	4	1016
3545.639	1	517	B						4	1644	4	(1515)
3543.669	2	0	172		3	842	1011	1167	2	1007	1	840
3542.076	3	0	148	305	1	1378†	A		4	1383	3	(1534)
3541.083	1		102		1	1005	A		5	1414	4	1516
3540.709	1	m	474†		3	1834†	2309†	m	4	(1367)	3	889
3540.121	1	0	D		1	1496	A		4	1524	3	(1534)
3537.729	1	0	D		1	775	B		2	(672)	1	569
3536.556	5	0	238	502					3	1262	2	(1524)
3529.818	1	1942	B		1	1188			1	1565	1	−378
3527.792	1	637	B						4	(1515)	4	1355
3526.465	1	B			1	1500			2	(1526)	2	1474
3526.167	3	480	945	1420	6	798	1264	1760	3	1267	3	797
3526.039	3	0	171	336	4	1685	1860	2008	3	1685	2	1519
3524.236	2	0	114		2	1201	1295		3	1413	2	1523
3521.833					1	1166	A		2	1846	1	(2526)
3521.264	4	518	768	1018	8	1112	1363	1614	4	1364	4	1111
3518.86	3	0	171	332	3	1358	1514	1672	3	1675	2	1837
3516.403	1	0	D		1	957	B		4	817	3	(771)
3513.820	5	468	621	766	10	1267	1416	1568	5	1416	5	1263
3511.748	2			207					4	(1251)	4	1199
3510.446	1	0	S		1	1571	S		1	1571	0	0
3509.870	1	47			1	2493			1	2516	1	2470
3508.494	1	0			1	1018			5	1053	4	(1062)
3506.498	1		501		4	1286	1526	1764	2	1525	2	1278
3505.065	2	0	246		3	1316†	1531†	1768†	2	(1504)	1	1268
3504.859	1	0	D		1	1440	A		2	(1526)	1	1612
3500.564					3	1099	1490	1900	3	1086	2	676
3497.843	2	0	342		3	1523	1856	2188	2	1855	1	1518
3497.110	1	0			1	1687			3	(1688)	3	1686
3490.575	3	191	347	513	6	1513	1681	1846	3	1682	3	1512
3489.670	1	0	D		1	1059	A		6	1190	5	(1216)
3485.342	2	0	624		3	1233	1849	2460	2	1847	1	2466
3476.853					5	428	571	726	4	933	3	(1087)
3476.704	1	0	S		1	2525	S		1	2525	0	0
3475.450	2	345	687		4	1516	1849	2184	2	1852	2	1513
3471.350	1	0	D		1	1617	B		2	(1526)	1	1435

TABLE D—(Continued)

λ	No. Meas.	π			No. Meas.	σ			J_1	Obs. g_1	J_2	Obs. g_2
3471.27					3	380	1463	2530	2	1458	1	2530
3469.012	1	0			1	824			4	(822)	4	826
3468.849	1	0	D		1	875	A		5	1176	4	(1251)
3465.863	1	1036			2	1516	2524		1	2534	1	1512
3463.305	1	0			1	1263			4	(1271)	3	1274
3462.353	1	0	D		1	1795	A		2	(1844)	1	1893
3458.304	1	0	S		1	1517	S		1	1517	0	0
3453.022	1	0	D		1	670	A		3	(766)	2	814
3452.273	1	0	D		1	1255			4	1262	3	(1264)
3451.915	2	0	1265		3	0	1272	2527	2	1272	1	2527
3451.628	1	44			1	1541	C		1	1563	1	1519
3450.328	1	926			2	1615	2522		1	2527	1	1610
3447.278	2	407	799		4	1448	1843	2238	2	1845	2	1447
3445.151	3	0	442	882	5	544	978	1390	3	1408	2	1845
3443.878	2	0	1029		3	508	1511	2525	2	1515	1	2525
3442.364	1		752		2	1010	1395		2	(1526)	2	(1148)
3440.989	3	0	343†	680†	5	844	1180	1512	3	1513	2	1850.
3440.610	4	0	165	350	7	1020	1172:	1344	4	1512	3	1679
3439.039	1	0	D		1	1103	B		5	1073	4	(1065)
3437.046	3	m		217	5	m	m	281	4	(1013)	3	1223
3431.815					3	931	1115	1323	3	1315	2	1507
3428.192	2	578	1163		4	1266	1840	2399:	2	1842	2	1265
3427.121	4	0	338	673	7	355	686	1019	4	1354	3	1689
3424.284	3	285	560	834	6	1416	1689	1963	3	1690	3	1416
3422.656	2	0	1298		3	−59	1237	2507	2	1238	1	2535
3419.706	1	712			2	809	1509		1	1512	1	806
3418.507	1	0	S		1	2525	S		1	2525	0	0
3417.842	1	1115			1	1424			1	2539	1	1424
3413.135	3	0	493	986	5	389	875	1361	3	1363	2	1853
3411.353	1	274	B		1	1104	C		4	1138	4	1070
3410.171	2	0	135		3	554	693	826	2	691	1	828
3407.461	4	0	328	661	7	387	707	1029	4	1357	3	1684
3404.357	3	0	689	1374	5	−186	486	1157	3	1160	2	1840
3402.256	1	0			1	1182			6	(1180)	6	1184
3401.521	3	0	327	649	5	396	723	1045	4	1364	3	1686
3399.336	2	627	1249		4	1229	1843	2458	2	1845	2	1227
3396.978	3	0	618	1212	5	80	677	1261	3	1270	2	1870
3392.652	3	323	665	991	6	1358	1680	2018	3	1684	3	1356
3392.304	1		2176		4	759	1841	2880	2	1845	2	762
3392.014	1	0			1	1551			2	(1504)	1	1457
3389.748	2	0	1408		3	−210	1161	2552	2	1161	1	2532
3387.410	3	0	144	282	5	479	611	751	3	754	2	895
3383.981	2		1060	1555	6	1195:	1693	2210	3	1690	3	1170
3383.692	2	0	1102		3	769	1855	2913	2	1846	1	763
3380.111	1	113	B		1	781	C		3	800	3	762
3379.017	2	0	469		2	2150	2597		3	1686	2	1228
3378.676	1	0	D		1	1444	B		5	(1213)	4	1155
3373.874	1	0	D		1	1100	B		5	1072	4	(1065)
3372.070	3	0	953	1877	4	1681	2619	3554	3	1681	2	744
3370.786	1	315	B		1	1185	C		5	1217	5	1154
3369.549	1	45	B		1	1073	C		4	1079	4	1068
3366.867	2	693	1407		4	1167	1850	2533	2	1852	2	1159
3366.789	5	0	247	515	8	1712	1934	2184	5	1212	4	966
3356.407	2	256	503		4	1533	1762	1993	2	1768	2	1526
3355.228	1	183	B		2	809	854		4	854	4	809

TABLE D—(Continued)

λ	No. Meas.	π			No. Meas.	σ			J₁	Obs. g₁	J₂	Obs. g₂
3354.064	1	0	S		1	1261	S		1	1261	0	0
3351.750	4	0	270	531	6	1330	1597	1828:	4	1070	3	807
3351.529	1	0	D		1	1808	A		2	(1844)	1	1880
3347.927	1	480	B		4	1290	1518	1752	2	1520	2	1283
3346.936	2	0	547		3	1692	2219	2743	3	1682	2	1146
3342.298	1	235			2	1280	1503		1	1506	1	1277
3342.216	2	0	732		2	799	1492:	m	2	1531	1	2263
3341.906	2	m	617†	728†	5	933†	1099:†	1221:†	5	(1213)	5	1083
3340.566	1	491	B		3	1289	1524	1757	2	1523	2	1284
3337.666	4	0	128	264	6	1478	1608	1728	5	1219	4	1090
3336.254	3	708	1060	1418	6	798	1162	1527	4	1163	4	814
3335.776	1	0	D		1	1503			2	1506	1	(1509)
3334.223	1	171	B		1	1088	C		5	1105	5	1071
3331.778	1	0	S		1	1409	S		1	1409	0	0
3331.612	2	0	124		6	1274	1383	1511	5	1033	4	913
3328.867	1	0			1	1045			5	(1046)	5	1044
3327.498	1	0	D		1	1180	A		4	1445	3	(1534)
3325.468	1	0	D		1	934	B		4	(822)	3	785
3324.541	1	0·	D		1	1220	B		6	(1180)	5	1172
3323.737	1	0			1	1507			2	(1518)	2	1496
3319.258	1	504	B		6	1083	1196	1303	4	1199	4	1076
3317.121	1	0	D		1	1499	A		2	(1526)	1	1553
3314.742	1	0			1	911			3	1100	2	(1194)
3310.496	3	m	476	981	5	−587	−90	354	4	866	3	1351
3310.347	1	210	B		1	1220	C		5	1241	5	1199
3306.356	2	0	762		3	1004	1763	2565:	2	1764	1	2525
3305.971	3	0	160	323	2	1344	1506		3	1667	2	1828
3301.227	1	234			2	1294	1509		1	1514	1	1289
3298.133	2	0	1259		2	33	1282		2	1284	1	2538
3292.590	1	290			2	2232	2516		1	2516	1	2232
3292.022	4	0	192	382	4	600	789	978	4	1171	3	1362
3290.988	2	0	1253		3	0	1246:	2530	2	1267	1	2520
3288.967	2	0	611		3	0	640	1243	3	1245	2	1852
3288.651	1	0	S		1	1520	S		1	1520	0	0
3286.755	1	0			1	1678			3	(1688)	3	1668
3284.588	1	152	B		1	1791	C		2	1829	2	1753
3282.891	1	0	B		1	658	A		2	700	1	(741)
3280.261	1	0	D		1	926	B		5	843	4	(822)
3278.741	1	0	D		1	1099	C		3	(1087)	3	1111
3276.468	2	574	1148		4	1288	1846	2402	2	1846	2	1288
3274.453					1	1389	C		4	(1370)	4	1408
3271.002	2	0	397		3	1448	1840	2230	2	1839	1	2233
3268.234	1	970			2	1573	2521		1	2526	1	1568
3265.616	1	0	D		1	1559	A		3	(1688)	2	1752
3265.046	2	0	162		3	990	1156	1342	3	1339	2	1515
3264.512	2	0	1602		2	1850	3450		2	1850	1	249
3263.378	1	0	D		1	1465	A		2	1492	1	(1520)
3260.261	1	446	B		1	1119†	m	m	4	(1251)	4	1139
3257.594	2	0	402		3	1698	2084	2479	3	1691	2	1295
3254.363	1	0	D		1	1009	A		6	1040	5	(1046)
3253.610					4	510	800	1080	4	1067	3	(1353)
3248.206	1	425	B		1	1776	C		3	1776	3	1634
3246.962	2	0	278		2		1834	2129	2	1839	1	1553
3244.190	2	0	142†		1	1011†	A		5	1519	4	(1661)
3243.109	2	m	514:†	678:†	1	776:†	m	m	4	(822)	4	987:

TABLE D—(*Continued*)

λ	No. Meas.	π			No. Meas.	σ			J₁	Obs. g₁	J₂	Obs. g₂
		π Components				σ Components						
3239.436	1	483	B		1	1563	C		4	(1661)	4	1540
3236.223	4	0	256	511	5	507	762	1015	4	1268	3	1522
3234.614	1	541			4	1224†	1390†	1572†	3	(1517)	3	1337
3233.967	1	255	B		1	1427:			4	1597	4	(1661)
3233.053	1	0	D		1	1066	A		7	1164	6	(1180)
3229.123	1	0	S		1	510	S		1	510	0	0
3228.254	2	0	353		3	1679†	2060†	2401†	2	(2041)	1	1684
3227.798	1	0	D		1	1712	B		4	(1661)	3	1644
3225.789	1	0	114		1	m	1045:		6	1519	5	(1621)
3222.069	1	315	B		1	1574	C		5	1606	5	1542
3219.806	1	0	D		1	1631	A		4	(1661)	3	1671
3219.581	2	0	174		2	1075:†	1254:†		4	1595	3	(1771)
3215.940	1	306	B		1	m	2058:†		2	(2041)	2	1888
3214.396	3	0	436	872					3	(1514)	2	1078
3211.989	1	0	D		1	1677	B		5	(1621)	4	1607
3211.683					1	1417†			6	1418::	5	(1418)
3208.470	2	0	343		2	m	360†	690†	2	348	1	(−12)
3205.400	1	526			2	2525	3029		1	3033	1	2521
3202.562	1	0	D		1	1268	B		4	(1013)	3	928
3200.475	1		127	B					2	(2041)	2	1978
3199.530	1	219	B		1	1574:	m	m	4	(1661)	4	1606
3196.930					1	1003	A		5	1529	4	(1661)
3193.228	3	512	780	1024	6	1272	1506	1771	4	1511	4	1256
3191.659	4	0	183	361	6	1703†	1875†	2048†	4	(1516)	3	1339
3188.819	2	0	2154			−1182	972	2837:	2	970	1	3022
3188.567	1	1190	B						5	(1621)	5	1383
3184.896	2		827	1245	6	1098	1519	1915	3	1515	3	1104
3182.970					4	56†	671†	1258†	3	1236	2	(1844)
3181.522	1	0	D		1	947	A		3	(1087)	2	1157
3180.756	1	835†	m		3	678	1522	2378	2	1526	2	678
3180.223		D			1	1292	A		4	1651	3	(1771)
3178.967	1	0			1	1052			5	(1052)	5	1052
3178.545	1	454	B						3	(771)	3	922
3178.015	1	0	D		1	1659	B		5	(1621)	4	1612
3176.366					1	665			2	(672)	1	679
3175.447	1	495	B		3	1489:†	1637†	1739†	5	(1621)	5	1521
3171.353	4	0	146	291	4	1160	1305	1433	4	1016	3	873
3167.907					1	926:	A		4	1369:	3	(1517)
3166.435					2	1025	m	m	4	(1251)	3	1326
3165.860	4	0	420	844	5	578	899	1349	4	1331	3	1754
3161.949	6	0	196	393					6	1428	5	(1621)
3160.658	1	90	B		1	1642	C		4	1653	4	1631
3160.344	1	0			1	1170			6	(1178)	6	1162
3157.88	1	0	D		1	1801	A		3	1967	2	(2041)
3157.040	5	0	319	550	6	325	568	839	5	1381	4	1648
3156.275	1	244	B		1	m	m	m	3	(1517)	3	1436
3155.293	1	0	D		1	794	A		5	(1052)	4	1116
3151.353	1	0	D		1	1116	B		5	1075	4	(1065)
3142.888	1	68	B		1	1500	C		2	1517	2	1483
3134.111	3	0	254	512	4	1772	2026	2272	4	1514	3	1260
3129.334	4	0	250	484	6	557	793	1015:	4	1266	3	1502
3125.653	2	m	516	1043	3	1534	2032	2543	3	1523	2	1010
3120.435	1	0	D		1	846	B		4	(822)	3	814
3119.495	1	0	D		1	965	A		5	(1052)	4	1074
3116.633	2	0	1538		3	21	1518	3036	2	1513	1	−15

TABLE D—(*Continued*)

λ	No. Meas.	π			No. Meas.	σ			J_1	Obs. g_1	J_2	Obs. g_2
		π Components				σ Components						
3112.079	1	271	B						5	(1216)	5	1162
3100.666	2		308:	783	6	1264	1521	1772	3	1519	3	1261
3100.304	2	463	1036		4	1008	1520	2027	2	1008	2	1522
3099.971	1	605	B		1	m	1503†		4	1518	4	(1367)
3099.897	1	1542			2	51	1524		1	1524	1	−18
3098.192	1	0			1	1236			5	(1213)	5	1259
3095.270	4	451†	610†	742†	6	1073	1233	1377	5	1226	5	1379
3093.883	1	0	D		1	1263	B		4	(1251)	3	1247
3093.806	2	537	1087		4	675	1211	1763	2	1218	2	678
3092.778	3	0	1122	2225	3	196†	1286†	2400†	3	(1264)	2	2371
3091.578	1	0	U		1	0	U		1	0	0	0
3090.209	1	528	B		5	944	1116	1291	3	939	3	763
3083.742	2	0	513		3	551	1048	1550	2	1010	1	1517
3078.436	1	0	S		1	713	S		1	713	0	0
3075.721	3	0	258	514	5	756	1007	1260	3	1262	2	1518
3073.982	1	0	D		1	1279	B		5	(1213)	4	1197
3067.244	5	0	157	304	1	909	A		4	1371	3	1525
3063.933	1	727	B		2	814	1523		1	1528	1	810
3060.984	3	286	571	853	6	1099	1372	1654	3	1378	3	1097
3060.545	1	0	D		1	1003	A		4	(1062)	3	1082
3059.086	1	0			1	1514			4	1516	3	(1517)
3057.446					1	1052			5	(1422)	4	1515
3055.263	1	0	D		1	892	A		3	(1100)	2	1204
3053.065	2	0	349		2	826	1175		2	1175	1	1524
3047.605	1	0			1	1514			3	1514	2	(1514)
3045.077	4	0	543	1165	5	307:	793	1358	4	1362	3	1927
3042.666	3	0	260	516	5	1265	1523	1780	3	1267	2	1011
3042.020	·2	0	1018		2	951:	2050		2	1032	1	−14
3041.745					1	1582	B		4	1344	3	(1264)
3040.428	1	0	D		1	1560	B		5	1406	4	(1367)
3039.322	1	0	D		1	950	A		6	1035	5	(1052)
3037.388	1	0			1	1516			2	1517	1	(1518)
3033.101	1	832			2	715	1519		1	1526	1	708
3031.638	1	0	U		1	0	U		1	0	1	0
3031.213	1	0			1	822			4	(822)	4	822
3030.149	1	0			1	1046			5	(1052)	5	1040
3029.237	3	335	698	1024	6	766	1107	1436	3	1107	3	768
3025.843	1	0	S		1	1510	S		1	1510	0	0
3025.638	1	0			1	1188			6	(1178)	6	1198
3024.033	1	0			1	1514			2	1516	1	(1518)
3021.074	1	0			1	1521			3	(1517)	3	1525
3020.640	1	0			1	1513			4	(1516)	4	1510
3020.487	1	0			1	1516			2	(1514)	2	1518
3018.983	1	0			1	1265			3	(1264)	3	1266
3016.186	2	0	1018		3	0	1010	2018	2	1008	1	− 5
3015.913	3	m	238	m	6	1526	1729	1954	5	1049	4	822
3014.175	3	0	760	1513	3	−224	521	1274	3	1273	2	2022
3011.482	1	0	D		1	974	B		4	818	3	(766)
3009.570	1	0			1	1364			4	(1367)	4	1361
3009.098	3	m	243	377	3	m	1703:	1802	6	(1178)	5	1045
3008.139	1	0	S		1	1518	S		1	1518	0	0
3007.281	1	0			1	1508			2	(1514)	2	1502
3005.302	1	0	D		1	1066	A		7	1162	6	(1178)
3004.119	4	615	809	1024	10	856	1053	1235	5	1049	5	848
3003.031	3	0	253	534	4	1266	1518	1757	3	1267	2	1012

TABLE D—(Continued)

λ	π Components No. Meas.	π			σ Components No. Meas.	σ			J₁	Obs. g₁	J₂	Obs. g₂
3000.950	1	0			1	1519			2	(1514)	1	1509
2999.512	1	0			1	1416			5	1422	5	1410
2996.386	1	0			1	1496			2	(1526)	1	1511
2994.507	1	0	S		1	1507	S		1	1507	0	0
2994.427	1	0			1	1530			3	(1517)	2	1510
2990.392	1	0	D		1	1095	B		5	1071	4	(1065)
2988.468	3	402	617	817	8	1072	1268	1464:	4	1274	4	1071
2987.292	1	0	D		1	1613	B		4	(1367)	3	1285
2983.574	1	0	D		1	1556	B		4	(1516)	3	1503
2981.852	1	0	D		1	958	A		4	1506	3	(1688)
2981.446	1	0			1	1520			3	(1517)	2	1516
2980.532	2	m	322†	459†	6	765†	910†	1055†	3	910	3	(766)
2976.126	3	0	203	416	5	928	1122	1309	3	1325	2	1525
2973.237	2	0	266		4	734	992	1273	4	1255	3	1517
2970.106	2	0	514		3	503	1010	1516	2	1009	1	1519
2968.481	1	245			2	1309†	1531†		1	(1520)	1	1283
2966.901	1	0	D		1	1151	A		5	1443	4	(1516)
2965.255	1	U			1	U			1	0	0	0
2960.299					1	1425			1	1425	0	0
2959.992	1	0	D		1	1069	A		6	1189	5	(1213)
2957.365	1	1542			1	0	1517		1	1517	1	−25
2954.651	3	0	187	372	4	979†	1162†	1342†	3	1342	2	(1526)
2953.940	2	504	1037		4	1004	1516	2012:	2	1519	2	1009
2947.877	3	265	530	782	6	1260	1515	1773	3	1517	3	1258
2947.363	2	379	756		3	1185	1547	1902	2	1543	2	1172
2941.343	2	0	1531		3	24	1517	3026	2	1506	1	−14
2936.904	2		507	625	6	1364	1514	1662	4	1516	4	1361
2929.618	3	0	525†	993†	3	1167†	1658†	2129†	3	1179	2	(679)
2929.008	3	0	513	1028	4	1518	2025	2528	3	1518	2	1009
2925.899	2	562	1144		4	668	1225	1784	2	674	2	1228
2925.359	1	0	D		1	1140	B		4	860	3	(766)
2923.288	1	0:			1	1046			5	(1046)	5	1046
2920.691	1	163	B		1	703	C		2	744	2	662
2918.354	1	89	B		1	1474			1	1519	1	1430
2918.023	1	0:			1	1178			6	(1180)	6	1178
2914.305	1	0			1	586	A		2	(679)	1	772
2912.158	4	0	258	519	6	1775	2027	2276	4	1519	3	1267
2908.864					1	1387†	A		4	1675::	3	(1771)
2907.518	1	0	D		1	1020	A		2	(1844)	1	2668
2901.910	1	0			1	1614			5	(1621)	5	1607
2901.381	3	283	549	810	6	1098	1361	1624	3	1359	3	1095
2899.416	2	0	273		3	1252	1523	1785	2	1520	1	1250
2895.035	1	206	B		1	1127	C		3	1161	3	1093
2894.505	1	0:			1	1514			2	(1526)	2	1502
2893.882	2	0	217		3	298†	501†	713†	4	893	3	(1100)
2887.806	1	0	D		1	1063	A		6	1188	5	(1218)
2886.316	3	0	371	697	4	1091	1434	1777	3	1089	2	744
2877.300	1	340	B		1	1334	C		4	1376	4	1292
2874.172	5	0	288	578	6	93	379	667	5	1238	4	1525
2872.333	3	440	844	1232	5	1264	1663	2084	3	1674	3	1264
2869.308	3	0	402	805	6	69	316	729	4	1116	3	1508
2866.624	2	844	1676		3	168	987	1813:	2	1829	2	995
2858.896	2	0	1184		2	−958†	m	1635:	2	334	1	(1518)
2851.798	2	0	345		3	28	343	679	2	338	1	− 5
2851.52					3	880†	1073†	1263†	3	864	2	(672)

TABLE D—(*Continued*)

λ	No. Meas.	π		No. Meas.	σ			J₁	Obs. g₁	J₂	Obs. g₂
2848.713	2	0	1510	3	−381	1018	2493	2	1009	1	2502
2846.830	1	0	D	1	1514	B		4	(1271)	3	1190
2845.595	3	0	599	4	84	677	1264	3	1267	2	1859
2843.977	1	0	D	1	754	A		3	923	2	(1008)
2843.631	4	0	312	6	446	748	1060	4	1370	3	1680
			624								
2838.120	2	679	1363	3	334	1010	1681:	2	1011	2	333
2835.457	3	810†	1224†	6	1127†	1520†	1924†	4	(1516)	4	1115
			1623†								
2832.436	4	0	228	6	366	589	810	4	1039	3	1265
			456								
2828.808	3	0	486	5	−441:	0	441	3	511	2	1014
			981								
2827.892	3	0	409	5	m	m	721†	4	1115	3	(1517)
			819								
2825.557	4	0	387	6	−243	145	495	4	884	3	1261
			777								
2823.276	3	358	718	6	911	1258	1608	3	1262	3	908
			1077								
2820.801	3	0	1203	5	1519	2687	3888	3	1520	2	342
			2329								
2819.286	1	0	D	1	884	B		3	(766)	2	707
2817.505	3	0	953	5	1266	2185	3104	3	1260	2	330
			1871								
2815.506	1	0	D	1	433	A		3	597	2	(679)
2813.288	5	0	146	5	595	758	917	5	1219	4	1371
			281								
2808.328	3	764	1506	6	535	1266	2011	3	1267	3	522
			2234								
2806.984	5	0	294	8	−75	163:	497	5	1074	4	1361
			588								
2804.521	3	673	1002	8	1039	1366	1694	4	1369	4	1039
			1332								
2803.613	1	0:		1	812			4	(822)	4	802
2797.775	3	1385	1906	5	880	1353	1834	4	1358	4	881
			2439								
2796.871	2	0	178					3	(1100)	2	1278
2795.540	2	m	m	5	1818†	2313†	2694†	4	(1367)	3	920
			924								
2792.397	4	0	155	4	503	647	802	4	950	3	1100
			299								
2791.786	1	111	B	1	1060	C		5	1071	5	1049
2789.803				1	1078			5	(1213)	4	1247
2788.106				1	1048	A		6	1360	5	(1422)
2781.835	3	0	506	5	1507	1992	2477	3	1501	2	1005
			1003								
2778.221	5	617	820	10	1219	1414	1607	5	1416	5	1219
			995								
2774.730	2	0	1588	3	10	1562	3117	2	1554	1	−17
2772.113	2	m	166	5	1655	1839	2003	3	1666	2	1496
			348								
2772.083	4	1040	1399	7	740	1089:	1471:	5	1417	5	1063
			1732								
2769.670	4	m	399†	6	2185†	2567†	2960†	5	1422	4	1024
			805†								
2769.297	1	0:		1	1178			6	(1178)	6	1178
2766.909	2	0	1173	3	50	1146	2266	2	1133	1	−13
2764.323	3	0	342	4	782	1153	1466	2	1837	2	1495
			684								
2763.108	3	0	364	5	1376	1713	2064	3	1364	2	1006
			730								
2762.027	2	m	496	6	1262	1505	1734	3	1494	3	1253
			730								
2761.780	2	602	1124	4	997	1553	2116	2	1565	2	1002
2759.814	1	301		2	24	287		1	287	1	−7
2754.427	4	0	202	3	1468	1670	1870	4	1469	3	1269
			400								
2754.030	1	244	B					2	(1008)	2	1130
2750.140	1	529	B,	2	m	m	1977†	3	1686	3	(1517)
2744.526				1	692	A		2	(1008)	1	1324
2743.564	1	313	B	1	1300	C		3	1368	3	(1264)
2742.406	2	351	707	4	1520	m	2211	2	1869	2	1521
2742.256				3	691†	979†	1267†	3	(1264)	2	1552
2737.310	1	1061		2	1520	2535		1	2547	1	1509
2735.475	1	m	127	1	979	A		4	(1367)	3	1495
2734.002	2	0	400	4	1384†	1782†	2190†	3	1410	2	(1008)
2733.581	1	0	D	1	1097	A		5	(1422)	4	(1503)
2728.819	1	180	B	1	863	C		4	885	4	841
2728.020	1	348	B	1	m	1456†		4	1454	4	(1367)
2723.577	2	0	1017	3	505	1515	2528	2	1516	1	2530

TABLE D—(Continued)

λ	No. Meas.	π			No. Meas.	σ			J₁	Obs. g₁	J₂	Obs. g₂
	π Components				σ Components							
2720.902	1	m	m	709	5	798	1220	1525	3	1520	2	1867
2719.418	1	0			1	1046			5	(1052)	5	1040
2718.435	2	0	399		2	690†	m	1480†	3	1407:	2	(1008)
2717.786	3	0	669	1389:	5	0	626	1286	3	(1264)	2	1929:
2714.868	1	421	B		1	1299:†			3	1404	3	(1264)
2711.655	1	0	D		1	1514	B		5	1396	4	(1367)
2710.543	1	0	D		1	936	B		3	765	2	(679)
2708.570	1	0:			1	1253			4	(1251)	4	1255
2706.581	2	0	158		1	1000	A		3	(1264)	2	1396
2706.012	1	0:			1	1178			6	(1178)	6	1178
2699.107	1	148	B		1	1390	C		4	1372	4	1408
2697.019	3	0	170	322	4	435	577	750	4	926	3	1093
2695.032	1	0	D		1	1302	A		5	(1422)	4	1452
2690.067	4	0	423	868	5	1943	2329	2773	4	1508	3	1086
2689.827	2	0	142	m	3	445†	580†	761†	4	942	3	(1100)
2689.212	1	0	D		1	1294	A		4	(1367)	3	1391
2680.452	2	201	416		4	1016	1215	1412	2	1214	2	1011
2679.062	1	0:			1	1413			5	(1422)	5	1404
2673.213	1	580	B		1	0	564		1	564	1	−16
2669.492	1	0	D		1	1006	A		6	1045	5	(1052)
2667.912	3	0	175	376	3	1002	1163	1322	3	1322	2	1482
2666.398	1	331	B		1	1294	C		3	1349	3	1239
2662.056	1	0	D		1	1330	B		3	(1264)	2	1231
2661.196	2	0	456		3	547	1007	1465	2	1006	1	548
2660.396	3	0	253	507	5	267	515	767	3	767	2	1019
2656.792	5	0	179	368	5	388	554	735	5	1099	4	1279
2656.145	1	0	D		1	1069	A		7	1162	6	(1178)
2651.706	2	m	409	597	3	467	668	m	4	1070	3	1271
2647.558	1			534	6	1344	1518	1684	3	1517	3	1348
2645.422	1	0	D		1	820	A		2	1169	1	(1518)
2643.997	2	0	353		3	0	350	690	2	343	1	−10
2641.645	1	0:			1	1352			4	(1368)	3	1372
2636.477	3	0	m	296	4	641	770	m	5	1227	4	1376
2635.808	1	0	D		1	804	A		3	940	2	(1008)
2632.593	2	331	726		3	m†	1489†	1861†	2	(1514)	2	1167
2632.238	2	698	1373		4	330†	990†	1694†	2	(1008)	2	325
2623.532	1	0	D		1	901	A		4	1173	3	(1264)
2618.708	3	0	180	338	1	1716†	m	m	4	(1516)	3	1346
2618.018	3		528	856	5	.924	1275	1589	3	1269	3	937
2614.494	1	m	768†		3	1107†	2045†	3009†	3	(1264)	2	313
2612.771	3	0	351	722					3	(1517)	2	1156
2610.750	2	0	1027		3	431†	1522†	2538†	2	(1514)	1	492
2606.826					1	985	A		5	1291	4	(1367)
2594.150	4	0	444	876	3	1809†	2226†	2632†	4	(1367)	3	942
2584.536	1	0	D		1	1013	A		6	1354	5	(1422)
2580.062	1	1653			1	0	1640		1	1640	1	−13
2576.688	1	680	B		3	996†	1144†	m	5	(1422)	5	1280
2564.555	2	0	1270		3	0	1217†	2454†	2	1241	1	(−14)
2561.262	2	0	369						3	1377	2	(1008)
2560.556	2	0	773†		2		750	1519	2	752	1	−14
2556.298					2	1075			4	1094	3	(1100)
2552.827	1	0	D		1	1266			3	(1264)	2	1263
2549.612	1	0	D		1	1378	A		4	1482	3	(1517)
2545.977	1	0	D		1	1527	B		3	1518	2	(1514)
2544.706	1	0	D		1	1028	A		5	1206	4	(1251)

TABLE D—(*Continued*)

λ	π Components				σ Components				J₁	Obs. g₁	J₂	Obs. g₂
	No. Meas.	π			No. Meas.	σ						
2543.920	1	0	D		1	913	A		4	1043	3	(1087)
2542.101	1	0	D		1	1026	B		3	790	2	(672)
2540.971					1	1521			2	1520	1	(1518)
2535.604	1	0	S		1	1514	S		·1	1514	0	0
2530.694	3	0	418	845	3	1926†	2340†	2775†	3	1936	2	(1514)
2527.433	1	0			1	1519			3	(1517)	3	1521
2524.290	1	0	S		1	1515	S		1	1515	0	0
2522.848	1	0			1	1512			4	(1516)	4	1508
2519.628	2	0	472		3	0	468	937	2	467	1	− 3
2518.100	·1	0	D		1	1516			2	(1514)	1	1512
2516.569	4	0	236	471	5	268:	532	797	4	1025	3	(1264)
2510.833	1	0	D		1	1527†	B		3	(1517)	2	1512
2508.751	3	0	337	648	3	0	352	694	3	670	2	(1008)
2507.899	1	0	D		1	902	A		4	1173	3	(1264)
2501.130	1	0	D		1	1508			4	(1516)	3	1519
2496.532	1	0	D		1	1169	A		5	1327	4	(1367)
2493.998	2	0	1320		3	0	1297	2582	2	1287	1	−18
2490.642	1	m	m	512	4	608	896	1164	3	1258	2	(1514)
2487.368	2	508	1030						2	(1514)	2	2011
2486.690	1	0	D		1	1294	B		4	1272	3	(1264)
2486.372	1		421		1	1207			4	(1516)	3	1937
2485.989	3	383†	575†	816†	5	1141†	1320†	1533†	4	(1367)	4	1161
2479.775	2	534	975		4	1013	1507	2005	2	1508	2	998
2476.654	2	0	797		3	1007	1780	2533	2	1001	·1	216
2473.156	2	m	694†	947†	1	1342:†			4	(1516)	4	1769
2468.878	1	473	B		1	1381†	C		5	(1422)	5	1327
2467.730	1	0	D		1	1247	A		3	(1264)	2	1273
2463.728	1	0	D		1	1234	A		3	(1264)	2	1279
2462.645	1	588	B		1	1405	C		4	1479	4	1331
2462.178	2	0	518		2	1499†	m	m	3	1506	2	1003
2457.596	1	375	B		1	1372	C		5	1410	5	1334
2453.475	1	0	D		1	1666	B		4	(1367)	3	1267
2443.871	5	659	849	1041	9	1208:	1409:	1647	5	1435	5	1221
2442.567	1	0			1	1057			5	(1052)	5	1062
2440.106	1	0			1	819			4	(822)	4	816
2439.743	1	0			1	1178			6	(1178)	6	1178
2438.181	1	0	D		1	1940	B		5	(1422)	4	1292
2389.971					1	1938			3	1655	2	(1514)
2371.428	2	373	689		4	1517	1851	2140	2	1843	2	1505
2369.454	1	988			1	1974::			1	(1518)	1	2506
2320.356	1	0	D		1	1499			4	1512	3	(1517)
2313.102	1	0			1	1491			3	1506	2	(1514)
2308.997	1	0	D		1	1579	B		2	1548	1	(1518)
2300.140	1	0	D		1	1117	A		3	1382	2	(1514)
2299.218	1	0			1	1531			2	(1514)	2	1548
2298.175	1	0			1	1518			4	(1516)	4	1520
2297.785	1	0			1	1504			3	(1517)	3	1491
2294.406	1	0	S		1	1523	S		1	1523	0	0
2292.523	1	0	D		1	1352	A		4	1476	3	(1517)
2287.248	1	0	D		1	1690	B		2	(1514)	1	1338
2284.087	1	0	D		1	1473	A		3	(1517)	2	1539
2276.025	1	0	D		1	1540	B		4	(1516)	3	1508
2272.067					1	1169			4	1430	3	(1517)

TABLE E
Observed and Corrected g-values

Desig	Observed g	R	U	A.D.	Corrected g	Res	Desig	Observed g	R	U	A.D.	Corrected g	Res
a^1P_1	0.828	5	1	±6	0.817	−.183	e^3G_5	1.264		1		1.248	+.048
							e^3G_4	1.110		2	8	1.096	+.046
a^1D_2	1.041	1	2	7	1.028	+.028	e^3G_3	0.853		1		0.842	+.092
a^1G_4	1.014	6	7	6	1.001	+.001	a^3H_6	1.178	2	12	5	1.163	−.004
b^1G_4	0.992		1		0.979	−.021	a^3H_5	1.052	8	12	8	1.038	+.005
a^1H_5	1.013	3	3	4	1.000	.000	a^3H_4	0.822	5	9	4	0.811	+.011
a^1I_6	1.027	1	1	3	1.014	+.014	b^3H_6	1.180		7	3	1.165	−.002
a^3P_2	1.526	12	9	6	1.506	+.006	b^3H_5	1.046		6	4	1.032	−.001
a^3P_1	1.520	12	4	4	1.500	.000	b^3H_4	0.822	1	7	4	0.811	+.011
b^3P_2	1.518	12	5	8	1.498	−.002	e^3H_6	1.241		1		1.225	+.058
b^3P_1	1.509	16	4	4	1.489	−.011	e^3H_5	1.124		1		1.109	+.076
c^3P_2	1.504	5	4	6	1.484	−.016	e^3H_4	0.882		1		0.871	+.071
c^3P_1	1.485	6	3	8	1.466	−.034	e^5S_2	1.978		1		1.952	−.048
e^3P_2	1.478	1	1	2	1.459	−.041	a^5P_3	1.688	23	6	5	1.666	−.001
e^3P_1	1.478		1		1.459	−.041	a^5P_2	1.844	32	7	5	1.820	−.013
a^3D_3	1.353	6	2	6	1.335	+.002	a^5P_1	2.526	26	2	5	2.499	−.001
a^3D_2	1.194	2	3	4	1.178	+.011	e^5P_3	1.686	1			1.664	−.003
a^3D_1	0.741	4	3	7	0.731	+.231	e^5P_1	2.464		2	4	2.432	−.068
b^3D_3	1.343		1		1.326	−.007	a^5D_4	1.516	3	18	5	1.496	−.004
e^3D_3	1.363		1		1.345	+.012	a^5D_3	1.517	13	19	6	1.497	−.003
e^3D_2	1.140		2	16	1.125	−.042	a^5D_2	1.514	17	19	7	1.494	−.006
e^3D_1	0.812	1	1	14	0.801	+.301	a^5D_1	1.518	10	10	5	1.498	−.002
f^3D_3	1.275	1			1.258	−.075	e^5D_4	1.522	2	3	13	1.502	+.002
a^3F_4	1.271	11	8	6	1.254	+.004	e^5D_3	1.528	3	3	6	1.508	+.008
a^3F_3	1.100	16	11	6	1.086	+.003	e^5D_2	1.523	4	4	5	1.503	+.003
a^3F_2	0.679	10	8	7	0.670	+.003	e^5D_1	1.538	5		7	1.518	+.018
b^3F_4	1.251	4	11	4	1.235	−.015	f^5D_4	1.534	1	3	12	1.514	+.014
b^3F_3	1.089	4	8	6	1.073	−.010	f^5D_3	1.636		2	6	1.615	+.115
b^3F_2	0.672	4	6	6	0.663	−.004	f^5D_2	1.635	1	1	3	1.614	+.114
c^3F_4	1.281	1	1	6	1.264	+.014	f^5D_1	1.684		1		1.662	+.162
c^3F_3	1.080	2		1	1.066	−.017	g^5D_4	1.507	1	5	11	1.487	−.013
c^3F_2	0.686		2	6	0.677	+.010	g^5D_3	1.512		2	3	1.492	−.008
e^3F_4	1.305		2	0	1.288	+.038	g^5D_2	1.59:		2	34	1.57:	+.07:
e^3F_3	1.122		2	8	1.107	+.024	h^5D_4	1.454		1		1.435	−.065
e^3F_2	0.630		2	10	0.622	−.045	i^5D_4	1.402		3	17	1.384	−.116
f^3F_4	1.156		1		1.141	−.109	i^5D_3	1.433		2	3	1.415	−.085
f^3F_3	1.085		2	7	1.071	−.012	a^5F_5	1.422	6	16	5	1.404	+.004
f^3F_2	0.685		1		0.676	+.009	a^5F_4	1.367	18	20	5	1.349	−.001
a^3G_5	1.213	11	15	6	1.197	−.003	a^5F_3	1.264	30	21	6	1.248	−.002
a^3G_4	1.068	16	10	5	1.051	+.001	a^5F_2	1.008	33	8	5	0.995	−.005
a^3G_3	0.766	7	11	6	0.756	+.006	a^5F_1	−0.014	21		6	−0.014	−.014
b^3G_5	1.216	3	5	9	1.200	.000	e^5F_5	1.440		2	10	1.421	+.021
b^3G_4	1.062	5	5	8	1.048	−.002	e^5F_4	1.348	1			1.331	−.019
b^3G_3	0.771	2	4	4	0.761	+.011	e^5F_3	1.252	1	1	2	1.236	−.014
							e^5F_2	1.004		1		0.991	−.009
							e^5F_1	0.007	1			0.007	+.007

TABLE E—(*Continued*)

Desig	Observed g	R	U	A.D.	Corrected g	Res	Desig	Observed g	R	U	A.D.	Corrected g	Res
f⁵F₅	1.402		1		1.384	−.016	x¹F₃°	1.093		1		1.079	+.079
f⁵F₄	1.373		1		1.355	+.005	w¹F₃°	0.920		4	5	0.908	−.092
f⁵F₂	0.980		1		0.967	−.033							
							z¹G₄°	1.038	1	4	8	1.025	+.025
e⁵G₆	1.369		1		1.351	+.018	y¹G₄°	1.077	1	2	3	1.063	+.063
e⁵G₅	1.378		3	3	1.360	+.093	x¹G₄°	0.991		3	3	0.978	−.022
e⁵G₄	1.254		1		1.238	+.088	w¹G₄°	1.014	1	1	2	1.001	+.001
e⁵G₃	1.311	1	2	8	1.294	+.377	v¹G₄°	1.067		1		1.053	+.053
e⁵G₂	0.970	1			0.953	+.620							
							z¹H₅°	1.031		3	4	1.018	+.018
f⁵G₆	1.340	1			1.323	−.010	y¹H₅°	1.04:		2	30	1.03:	+.03:
f⁵G₅	1.237		1		1.221	−.046							
f⁵G₃	1.157		1		1.142	+.225	x¹H₅°	1.031	1			1.018	+.018
							z¹I₆°	1.023		1		1.010	+.010
g⁵G₆	1.42:		1		1.40:	+.07:							
g⁵G₂	0.348		1		0.343	+.010	z³S₁°	1.913	3	1	11	1.888	−.112
							y³S₁°	1.909	5	1	7	1.884	−.116
e⁵H₇	1.32:		1		1.30:	+.01:							
e⁵H₆	1.207		1		1.191	−.023	z³P₂°	1.513	3	4	4	1.493	−.007
e⁵H₅	1.117		1		1.102	+.002	z³P₁°	1.516	2	1	6	1.496	−.004
e⁵H₄	0.91:		1		0.90:	.00:							
e⁵H₃	0.490		1		0.484	−.016	y³P₂°	1.463	2	3	11	1.444	−.056
							y³P₁°	1.621	2	3	10	1.600	+.100
e⁷S₃	1.94:	1	1	24	1.92:	−.08:							
							x³P₂°	1.280	5	2	6	1.263	−.237
e⁷P₄	1.606	1	2	6	1.585	−.165	x³P₁°	1.567	7	1	8	1.547	+.047
e⁷P₃	1.709		3	16	1.687	−.230							
							w³P₂°	1.488	5		4	1.469	−.031
e⁷D₅	1.606	1	3	4	1.585	−.015	w³P₁°	1.407	3		2	1.389	−.111
e⁷D₄	1.677	2	4	11	1.655	+.005							
e⁷D₃	1.778	3	4	10	1.755	+.005	v³P₂°	1.505	1	6	5	1.495	−.005
e⁷D₂	2.035	5		6	2.009	+.009	v³P₁°	1.437	2	1	16	1.418	−.082
e⁷D₁	3.041	3	1	13	3.002	+.002							
							z³D₃°	1.338	1	3	5	1.321	−.012
f⁷D₅	1.530	1	1	12	1.510	−.090	z³D₂°	1.183	1			1.168	+.001
f⁷D₄	1.595	2	3	12	1.574	−.076	z³D₁°	0.520	3		6	0.513	+.013
f⁷D₂	1.868	1	2	14	1.844	−.156							
							y³D₃°	1.341	5	3	6	1.324	−.009
g⁷D₅	1.607		1		1.586	−.014	y³D₂°	1.166	2	4	8	1.151	−.016
g⁷D₄	1.68:		1		1.65:	.00:	y³D₁°	0.504	4	1	6	0.493	−.007
e⁷F₆	1.510		3	7	1.490	−.010	x³D₃°	1.370	6	2	6	1.352	+.019
e⁷F₅	1.525	1	4	6	1.505	+.005	x³D₂°	1.216	6	3	7	1.200	+.033
e⁷F₄	1.638	2	2	10	1.617	+.117	x³D₁°	0.563	6		8	0.556	+.056
e⁷F₃	1.519		1		1.499	−.001							
e⁷F₁	2.521	1			2.490	+.990	w³D₃°	1.364	4	2	4	1.346	+.013
							w³D₂°	1.232	6	1	5	1.216	+.049
e⁷G₆	1.434		3	4	1.415	+.010	w³D₁°	0.777	4	1	7	0.767	+.267
e⁷G₅	1.397	1	2	14	1.379	+.012							
e⁷G₄	1.356	2	1	18	1.338	+.038	v³D₃°	1.227	2	2	5	1.211	−.122
e⁷G₃	1.262		1		1.244	+.077	v³D₂°	0.967		1		0.954	−.213
e⁷G₁	−0.378	1			−0.374	+.126	v³D₁°	0.569		1		0.562	+.062
z¹P₁°	1.283	2	1	4	1.266	+.266							
							u³D₃°	1.323	3	1	4	1.306	−.027
z¹D₂°	0.93:		1		0.92:	−.08:	u³D₂°	1.171	4	2	5	1.156	−.011
y¹D₂°	1.038	3		2	1.025	+.025	u³D₁°	0.709	4	3	9	0.700	+.200
x¹D₂°	0.895	1			0.883	−.117							
w¹D₂°	1.003	2		4	0.990	−.010							
z¹F₃°	1.031		3	7	1.018	+.018							
y¹F₃°	1.22:		1		1.21:	+.21:							

TABLE E—(Continued)

Desig	Observed g	R	U	A.D.	Corrected g	Res
$t^3D_3^\circ$	1.334		4	7	1.317	−.016
$t^3D_2^\circ$	1.160	1	2	2	1.145	−.022
$t^3D_1^\circ$	0.812	3		5	0.801	+.301
$s^3D_3^\circ$	1.247		1		1.231	−.102
$z^3F_4^\circ$	1.266	2	1	7	1.250	.000
$z^3F_3^\circ$	1.100	2	2	11	1.086	+.003
$z^3F_2^\circ$	0.691	2	1	9	0.682	+.015
$y^3F_4^\circ$	1.262	3	2	6	1.246	−.004
$y^3F_3^\circ$	1.100	4	2	8	1.086	+.003
$y^3F_2^\circ$	0.697	1	2	13	0.688	+.021
$x^3F_4^\circ$	1.362	3	1	4	1.344	+.094
$x^3F_3^\circ$	1.174	5	2	13	1.159	+.076
$x^3F_2^\circ$	0.753	5	3	7	0.743	+.076
$w^3F_4^\circ$	1.197	3	3	3	1.181	−.069
$w^3F_3^\circ$	1.180	1			1.165	+.082
$w^3F_2^\circ$	0.686	1	2	6	0.677	+.010
$v^3F_4^\circ$	1.137	2	3	9	1.122	−.128
$v^3F_3^\circ$	1.110		1		1.096	+.013
$v^3F_2^\circ$	0.814		1		0.803	+.136
$u^3F_4^\circ$	1.163	2	1	6	1.148	−.102
$u^3F_3^\circ$	1.091		2	9	1.077	−.006
$u^3F_2^\circ$	0.696	1	1	4	0.687	+.020
$t^3F_4^\circ$	1.251		2	4	1.235	−.015
$t^3F_2^\circ$	0.707		1		0.698	+.031
$z^3G_5^\circ$	1.264	1	3	3	1.248	+.048
$z^3G_4^\circ$	1.114	4	3	4	1.100	+.050
$z^3G_3^\circ$	0.801	5	1	4	0.791	+.041
$y^3G_5^\circ$	1.223	2	4	7	1.207	+.007
$y^3G_4^\circ$	1.067	2	3	3	1.053	+.003
$y^3G_3^\circ$	0.775	2	2	8	0.765	+.015
$x^3G_5^\circ$	1.219	2	2	2	1.203	+.003
$x^3G_4^\circ$	1.075		2	2	1.061	+.011
$x^3G_3^\circ$	0.677	1	1	7	0.668	−.082
$w^3G_5^\circ$	1.29:		1		1.27:	+.07:
$w^3G_4^\circ$	0.946	3		4	0.934	−.116
$w^3G_3^\circ$	0.592	1	1	6	0.584	−.166
$v^3G_5^\circ$	1.178	4	3	7	1.163	−.037
$v^3G_4^\circ$	0.926	7	2	5	0.914	−.136
$v^3G_3^\circ$	0.773	1	4	5	0.763	+.013
$u^3G_5^\circ$	1.155	2	2	8	1.140	−.060
$u^3G_4^\circ$	1.081	2	3	8	1.067	+.017
$u^3G_3^\circ$	0.811	2	3	6	0.801	+.051
$t^3G_5^\circ$	1.250	1	1	9	1.234	+.034
$t^3G_4^\circ$	1.198	1	1	1	1.183	+.133
$t^3G_3^\circ$	0.934	1	1	10	0.922	+.172
$s^3G_5^\circ$	1.160		2	2	1.145	−.055
$s^3G_3^\circ$	0.868	1	2	3	0.857	+.107
$r^3G_5^\circ$	1.206		1		1.190	−.010
$r^3G_4^\circ$	1.043		1		1.030	−.020
$r^3G_3^\circ$	0.790		1		0.780	+.030

Desig	Observed g	R	U	A.D.	Corrected g	Res
$z^3H_6^\circ$	1.216	2	2	3	1.200	+.033
$z^3H_5^\circ$	1.074	2	3	3	1.060	+.027
$z^3H_4^\circ$	0.892	4	2	5	0.880	+.080
$y^3H_6^\circ$	1.18:		2	20	1.17:	.00:
$y^3H_5^\circ$	1.089	4	2	8	1.075	+.042
$y^3H_4^\circ$	0.941	3	2	3	0.929	+.129
$x^3H_6^\circ$	1.176		2	14	1.161	−.006
$x^3H_5^\circ$	1.062		2	10	1.038	+.005
$w^3H_6^\circ$	1.192		3	4	1.177	+.010
$w^3H_5^\circ$	1.047		4	4	1.033	.000
$w^3H_4^\circ$	0.821	1	3	2	0.810	+.010
$v^3H_6^\circ$	1.184		3	4	1.169	+.002
$v^3H_5^\circ$	1.071		2	0	1.057	+.024
$v^3H_4^\circ$	0.815		3	9	0.804	+.004
$u^3H_6^\circ$	1.181		3	4	1.166	−.001
$u^3H_5^\circ$	1.043		2	3	1.029	−.004
$u^3H_4^\circ$	0.870		2	10	0.859	+.059
$t^3H_6^\circ$	1.178		2	0	1.163	−.004
$t^3H_5^\circ$	1.054		2	8	1.040	+.007
$t^3H_4^\circ$	0.816		1		0.805	+.005
$z^3I_7^\circ$	1.164		1		1.149	+.006
$z^3I_6^\circ$	1.054		1		1.040	+.016
$z^3I_5^\circ$	0.844		1		0.833	.000
$y^3I_7^\circ$	1.162		2	0	1.147	+.004
$y^3I_6^\circ$	1.032	1	3	5	1.019	−.005
$y^3I_5^\circ$	0.841	1	1	2	0.830	−.003
$x^3I_7^\circ$	1.160		2	2	1.145	+.002
$x^3I_6^\circ$	1.042		2	2	1.028	+.004
$x^3I_5^\circ$	0.843		1		0.832	−.001
$z^5S_2^\circ$	2.011	4	1	6	1.985	−.015
$y^5S_2^\circ$	1.913	2	2	11	1.888	−.112
$z^5P_3^\circ$	1.679	6	1	5	1.657	−.010
$z^5P_2^\circ$	1.859	6		7	1.835	+.002
$z^5P_1^\circ$	2.520	6		5	2.487	−.013
$y^5P_3^\circ$	1.683	3	2	8	1.661	−.006
$y^5P_2^\circ$	1.860	5		10	1.836	+.003
$y^5P_1^\circ$	2.535	3	1	6	2.502	+.002
$x^5P_3^\circ$	1.672	2	2	9	1.650	−.017
$x^5P_2^\circ$	1.846	4	2	7	1.822	−.011
$x^5P_1^\circ$	2.496	1	2	10	2.464	−.036
$w^5P_3^\circ$	1.680	1	1	6	1.658	−.009
$w^5P_2^\circ$	1.846		1		1.822	−.011
$w^5P_1^\circ$	2.468	2		2	2.436	−.064
$v^5P_3^\circ$	1.668	1	1	1	1.646	−.021
$v^5P_2^\circ$	1.763	3	3	7	1.740	−.093
$v^5P_1^\circ$	2.242	4		10	2.213	−.287
$u^5P_1^\circ$	2.668		1		2.633	+.133
$t^5P_2^\circ$	1.72:		1		1.70:	−.13:

TABLE E—(*Continued*)

Desig	Observed g	R	U	A.D.	Corrected g	Res	Desig	Observed g	R	U	A.D.	Corrected g	Res
$z^5D_4°$	1.522	1	6	9	1.502	+.002	$z^5G_6°$	1.350	.	1		1.332	−.001
$z^5D_3°$	1.520	2	6	6	1.500	.000	$z^5G_5°$	1.234	2	3	8	1.218	−.049
$z^5D_2°$	1.523	3	5	5	1.503	+.003	$z^5G_4°$	1.117	5	2	3	1.103	−.047
$z^5D_1°$	1.515	3	2	7	1.495	−.005	$z^5G_3°$	0.899	5	1	8	0.887	−.030
							$z^5G_2°$	0.339	4	1	5	0.335	+.002
$y^5D_4°$	1.516	3	2	3	1.496	−.004							
$y^5D_3°$	1.512	5	3	5	1.492	−.008	$y^5G_6°$	1.360		1		1.342	+.009
$y^5D_2°$	1.515	5	3	4	1.495	−.005	$y^5G_5°$	1.219	2		0	1.203	−.064
$y^5D_1°$	1.512	4	2	3	1.492	−.008	$y^5G_4°$	1.037	2	1	7	1.024	−.126
							$y^5G_3°$	0.917	1	2	6	0.905	−.012
$x^5D_4°$	1.509	3	3	9	1.489	−.011	$y^5G_2°$	0.335	3		4	0.331	−.002
$x^5D_3°$	1.524	5	4	5	1.504	+.004							
$x^5D_2°$	1.521	6	2	5	1.501	+.001	$x^5G_6°$	1.354		1		1.336	+.003
$x^5D_1°$	1.518	4	2	4	1.498	−.002	$x^5G_5°$	1.286		2	6	1.269	+.002
							$x^5G_4°$	1.173		1		1.158	+.008
$w^5D_4°$	1.512	1	3	4	1.492	−.008	$x^5G_3°$	0.940	1	2	2	0.928	+.011
$w^5D_3°$	1.501	3	7	6	1.481	−.019	$x^5G_2°$	0.327	1	2	11	0.323	−.010
$w^5D_2°$	1.553	5	3	6	1.533	+.033							
$w^5D_1°$	1.332	2	1	5	1.315	−.185	$w^5G_6°$	1.323		1		1.306	−.027
							$w^5G_5°$	1.322	1	2	6	1.305	+.038
$v^5D_4°$	1.419	1	1	11	1.401	−.099	$w^5G_4°$	1.160	1	2	10	1.145	−.005
$v^5D_3°$	1.404		3	4	1.386	−.114	$w^5G_3°$	0.943	1			0.931	+.014
$v^5D_2°$	1.396	1			1.378	−.122	$w^5G_2°$	0.478	2		11	0.472	+.139
$v^5D_1°$	1.407		1		1.389	−.111							
							$z^5H_5°$	1.068	2		6	1.054	−.046
$u^5D_4°$	1.359	5		8	1.341	−.159	$z^5H_4°$	0.882	2		2	0.871	−.029
$u^5D_3°$	1.415	4		4	1.397	−.103	$z^5H_3°$	0.516	2		5	0.509	+.009
$u^5D_2°$	1.277	6	1	7	1.260	−.240							
$u^5D_1°$	1.428	2	1	4	1.410	−.090	$z^7P_4°$	1.770	3	2	8	1.747	−.003
							$z^7P_3°$	1.933	4	1	2	1.908	−.009
$t^5D_4°$	1.506		1		1.486	−.014	$z^7P_2°$	2.364	5		9	2.333	.000
$z^5F_5°$	1.417	2	2	6	1.399	−.001	$y^7P_4°$	1.77:		1		1.75:	.00:
$z^5F_4°$	1.373	3	3	5	1.355	+.005	$y^7P_3°$	1.933	1	2	4	1.908	−.009
$z^5F_3°$	1.266	4	4	6	1.250	.000	$y^7P_2°$	2.371		1		2.340	+.007
$z^5F_2°$	1.017	6	1	7	1.004	+.004							
$z^5F_1°$	−0.012	2	2	6	−0.012	−.012	$z^7D_5°$	1.618	1	5	9	1.597	−.003
							$z^7D_4°$	1.664		9	10	1.642	−.008
$y^5F_5°$	1.435	2	1	10	1.417	+.017	$z^7D_3°$	1.769	2	5	15	1.746	−.004
$y^5F_4°$	1.362	2	4	3	1.344	−.006	$z^7D_2°$	2.034	1	3	7	2.008	+.008
$y^5F_3°$	1.260	5	2	4	1.244	−.006	$z^7D_1°$	3.038	3	1	11	2.999	−.001
$y^5F_2°$	1.011	5	1	2	0.998	−.002							
$y^5F_1°$	−0.016	3		6	−0.016	−.016	$z^7F_6°$	1.518		2	8	1.498	−.002
							$z^7F_5°$	1.518		4	2	1.498	−.002
$x^5F_5°$	1.408		2	2	1.390	−.010	$z^7F_4°$	1.513	2	4	7	1.493	−.007
$x^5F_4°$	1.345	1	2	10	1.328	−.022	$z^7F_3°$	1.533	1	1	0	1.513	+.013
$x^5F_3°$	1.270	1	4	8	1.254	+.004	$z^7F_2°$	1.524	2	1	9	1.504	+.004
$x^5F_2°$	1.011	4		11	0.998	−.002	$z^7F_1°$	1.569	2		4	1.549	+.049
$x^5F_1°$	−0.006	2		1	−0.006	−.006							
							$1_2°$	1.152	5	1	6	1.137	
$w^5F_5°$	1.400		2	4	1.382	−.018	$4_4°$	0.966	1			0.953	
$w^5F_4°$	1.463	2	3	8	1.444	+.094							
$w^5F_3°$	1.369	3	2	6	1.351	+.101	$6_6°$	1.075	1	4	8	1.061	
$w^5F_2°$	1.132	1	1	2	1.117	+.117	$8_1°$	1.262	4	3	8	1.246	
$w^5F_1°$	0.287	1			0.283	+.283							
							$10_4°$	1.495	1			1.476	
$v^5F_5°$	1.334	1			1.317	−.083	$12_6°$	1.374	1	1	6	1.356	
$v^5F_4°$	1.281	1	2	7	1.264	−.086							
$v^5F_3°$	1.252	1	2	10	1.236	−.014							
$v^5F_2°$	1.284	7	1	6	1.267	+.267							
$v^5F_1°$	0.233	2		16	0.230	+.230							

INDEX

Analysis of spectrum, 116–126
  table of progress, 114

Babcock, H. D., 114, 115, 132
Burns, K., 113, 114, 116

Catalán, M. A., 113, 114, 116
Classified lines, description of tables, 132
  list, table B, 139
  number, 114
Comparison of Fe I with Fe III, table 2, 117
  with Fe II, table 3, 117
  of Fe II and Fe III, table 4, 117

Dobbie, J. C., 117

Edlén, B., 117
Electron configurations, high even levels, 119–121
  low even levels, 116–118
  odd levels, 121–125
  unclassified levels, 125
Energy levels, accuracy, 116
  list, table A, 134
  number detected, 114, 116

Green, L. C., 113

Harrison, G. R., 114, 181
Hund, F., 113, 114
Hund Theory, comparison with observation, 116–125
  apparent exception, 125

Intensities, compilation, 115
  inaccuracy, 115
  sources, 139
Intensity of combinations, singlets, table 17, 125
  triplets, table 15, 124

Ionization potential, 116, 118, 119

Kiess, C. C., 115
King, A. S., 115, 123, 126

Laporte, O., 113, 114, 117

Meggers, W. F., 113, 115
Multiplets, number, 114
  predicted solar lines in, 127

Pentads, high even, 119–121
Predicted lines in solar spectrum, list, table C, 170
  method of study, 126–129
  probability of accidental coincidences, 129, 130
  reality of accepted cases, 130, 131
Probability of accidental coincidences with solar lines, 129, 130

Quintet terms, analysis, 119, 122, 123

Rydberg denominators, 118–120

Septet terms, analysis, 119, 121, 122
Singlet terms, analysis, 117, 124, 125
Solar spectrum—lines of Fe I, apparent absences, probably illusory, 132
  number of lines present, table 24, 132
  observed lines present, 132
  predicted lines probably present, table C, 170
  Revised Rowland Table, 115
  source for iron spectrum, 126
Sources, intensity, 115
  table B, 139
  temperature class, 115
  wave-length, 115

Spectral series, 118, 119
Structure of spectrum, 116–126
Swings, P., 117

Temperature classification, list, table B, 139
  sources, 115
Terms, spectroscopic; list, table A, 134
  number, 114
  predicted odd terms, 121–125
  Zeeman g-values, tables A, E, 134, 203
Triads of terms, 122–125
Triplet terms, analysis, 117, 119, 123, 124

Unclassified levels, 116, 125
Unclassified lines, 126
  table 19, 127

Walters, F. M., Jr., 113, 114, 116
Wave-lengths, accuracy, 115
  bibliography of table B, 169
  compilation, 115
  sources, 115
  table B, 139

Zeeman effect, 181–183
  method of analysis, 181
Zeeman g-values, accuracy of final values, 182
  comparison with Landé's theory, table 26, 182
  correction of preliminary determinations, 182
  final values, 183
  perturbations, 183
  table E, 203
Zeeman patterns, observed, 181
  table D, 184

207